

FIG. 1

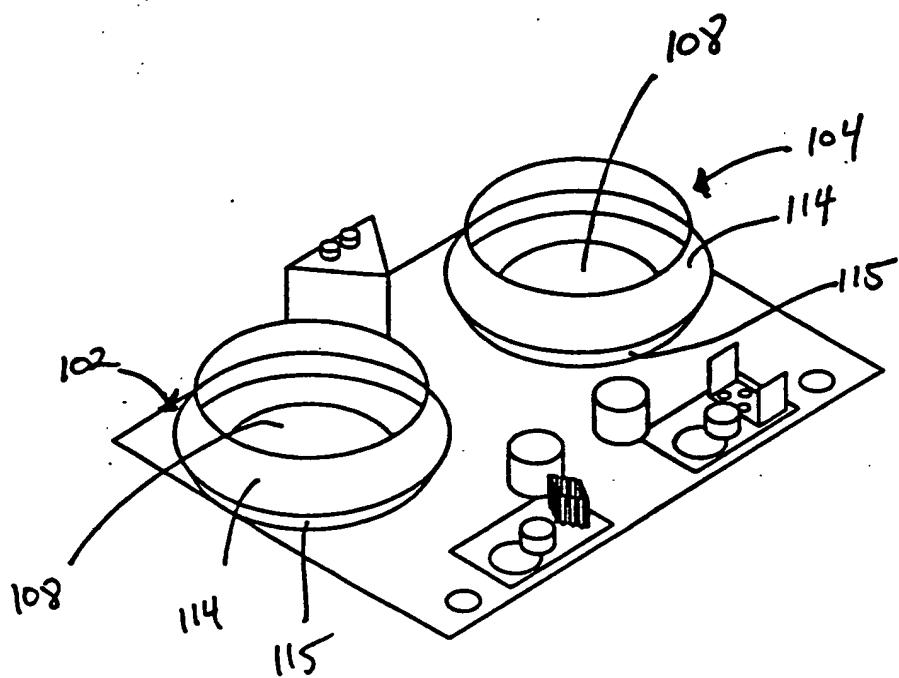


FIG. 2

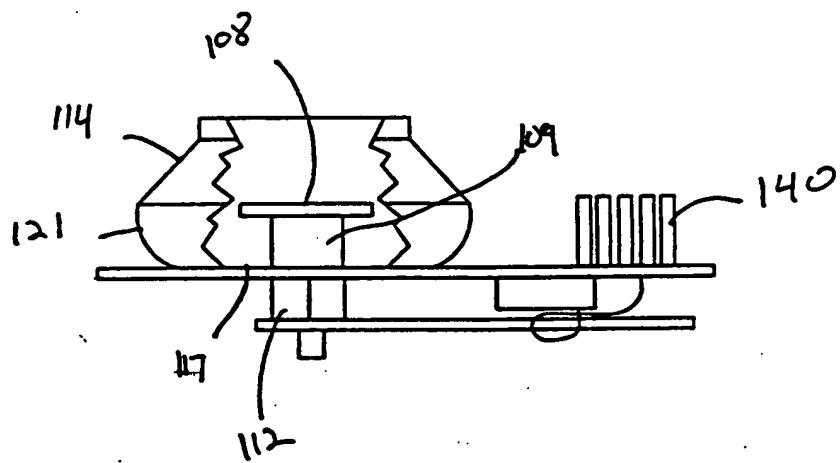
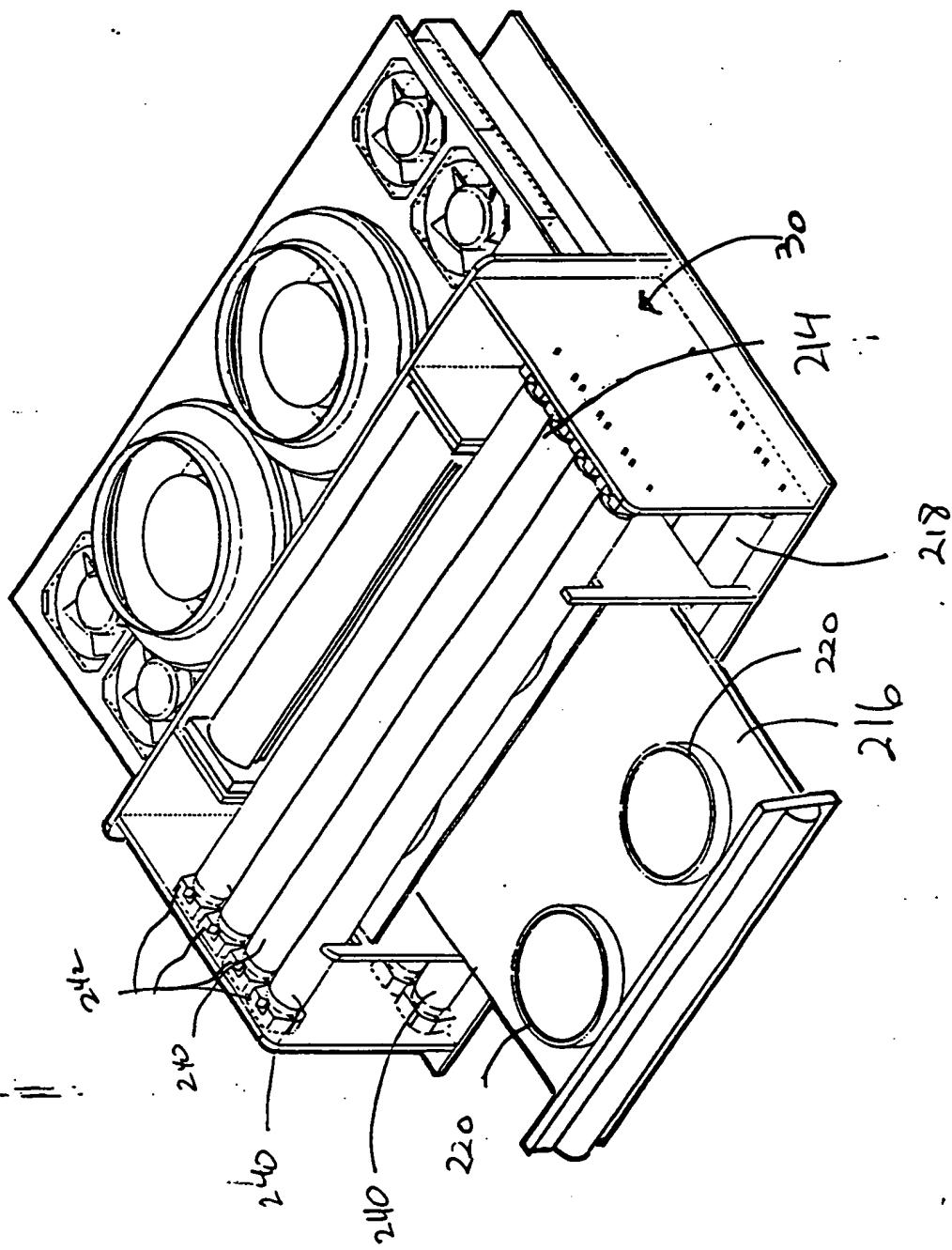


FIG. 3



F 1 G. 4

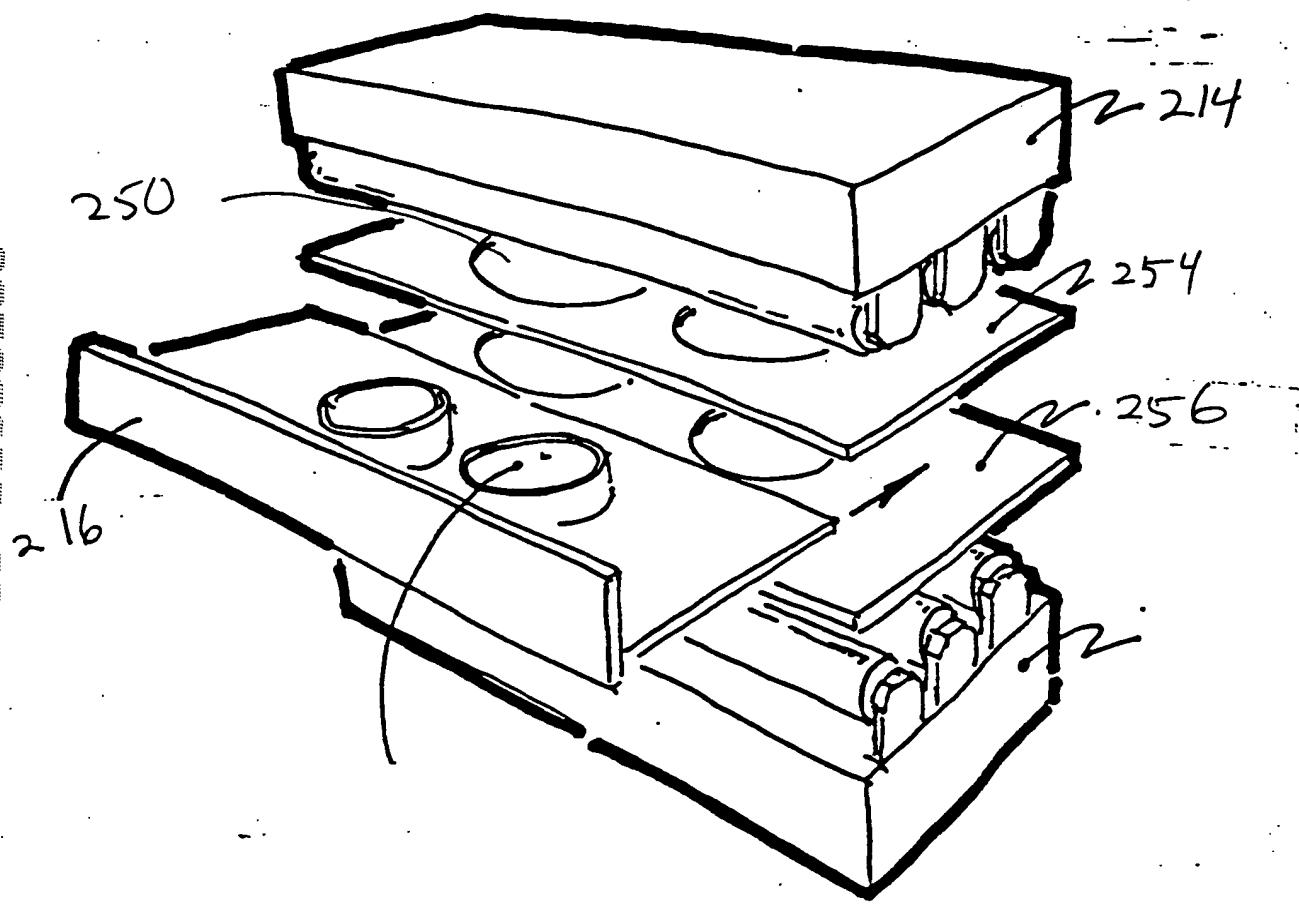


FIG. 5

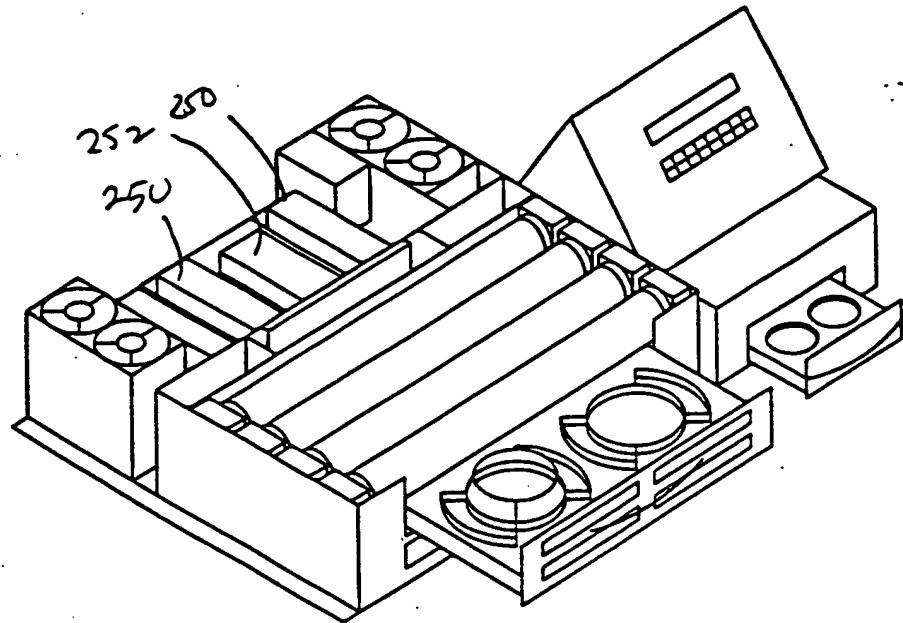
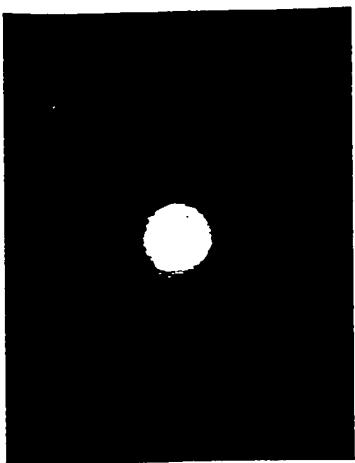
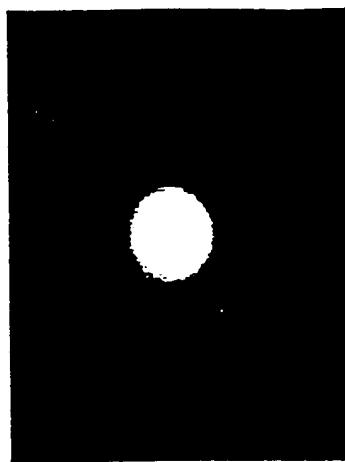


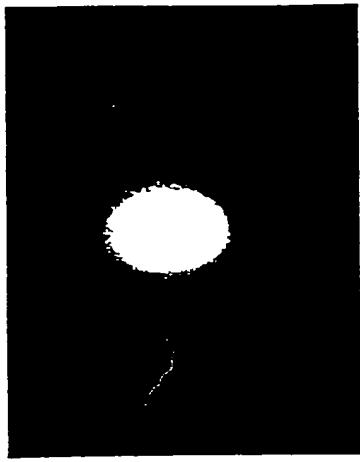
FIG. 6



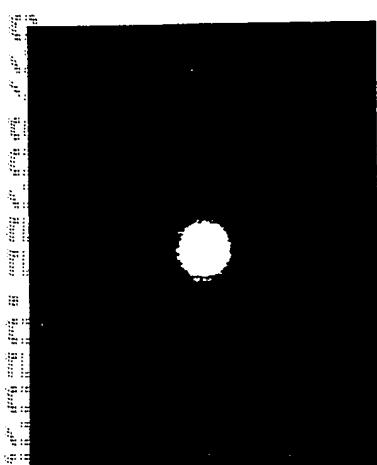
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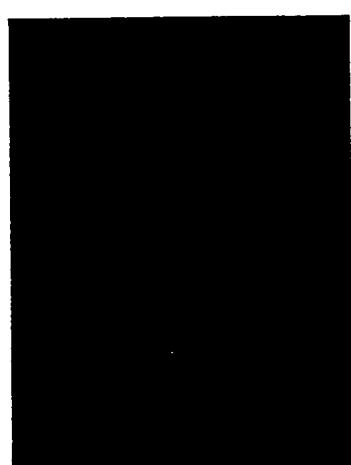
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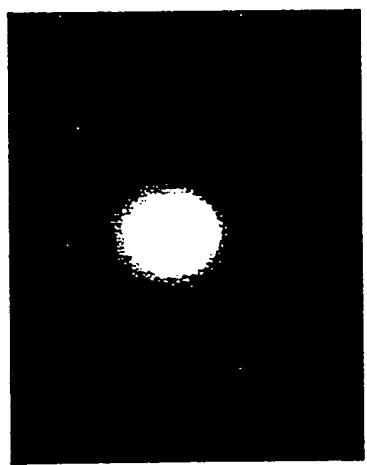
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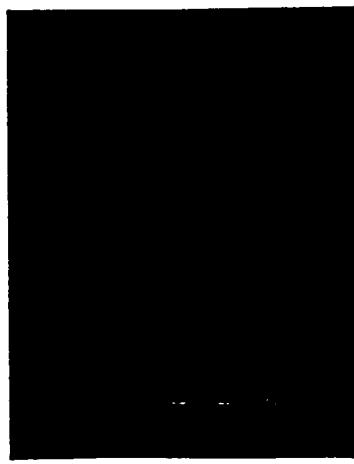
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E



F



G

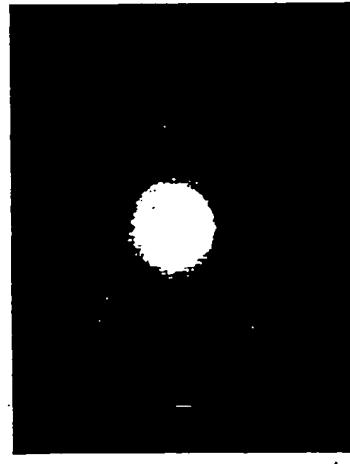
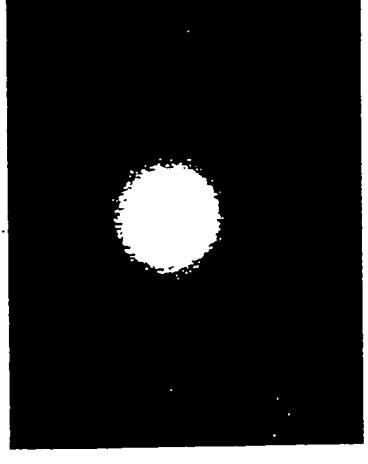
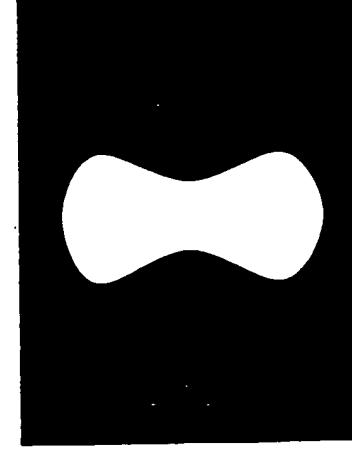
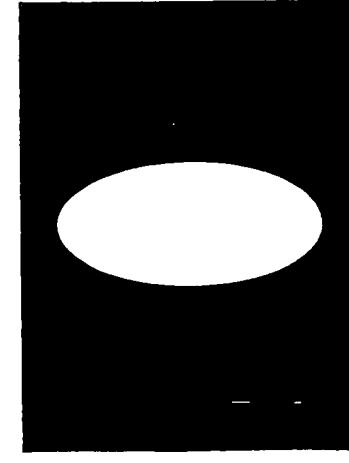
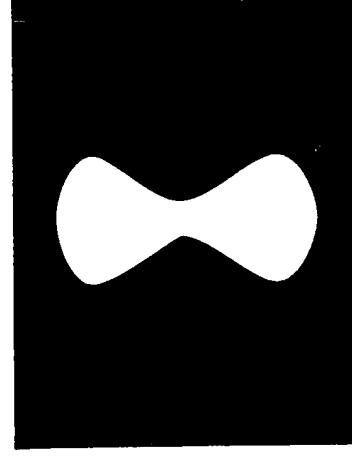
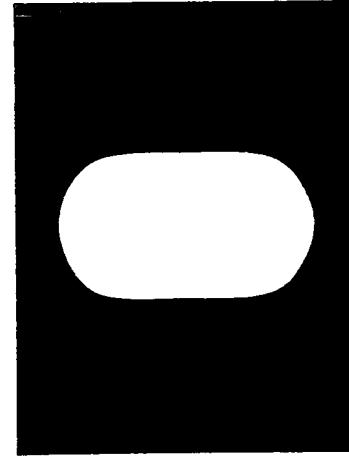
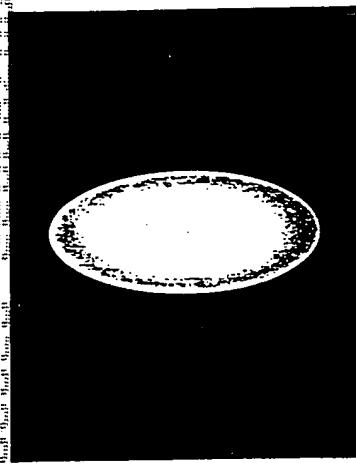
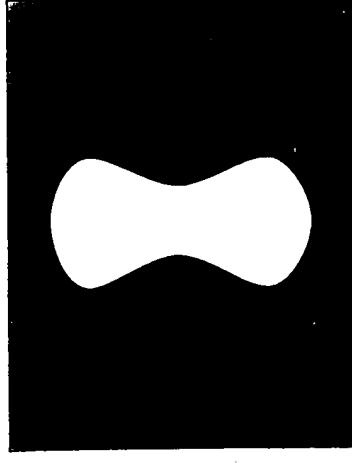
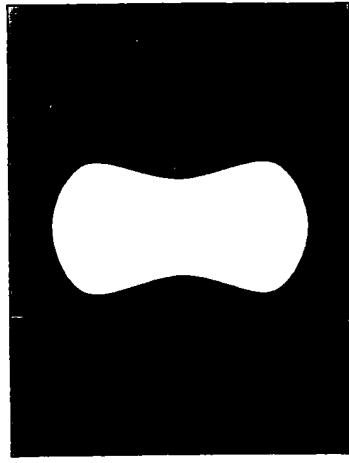
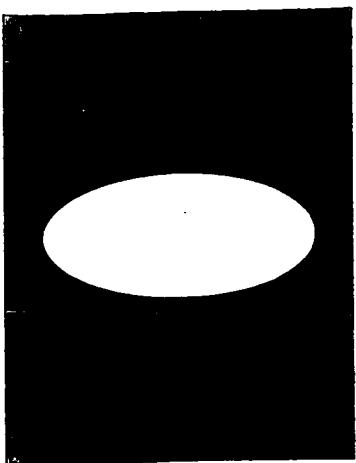


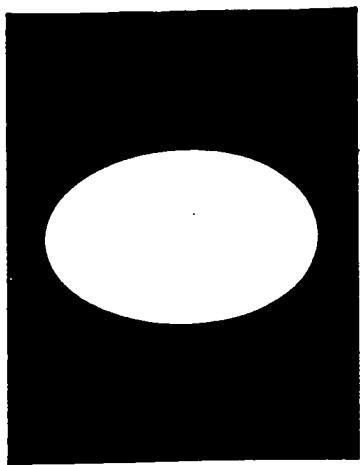
FIG. 7

H



H

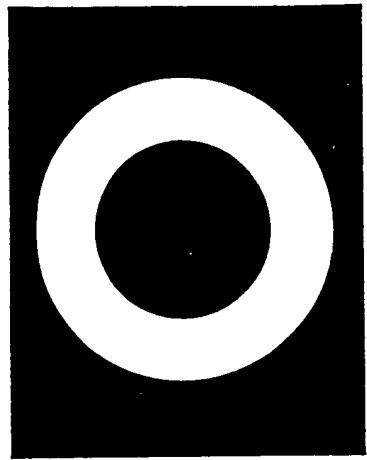




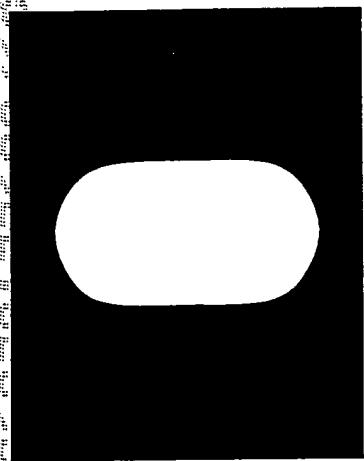
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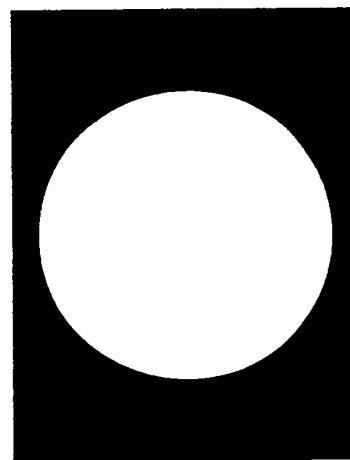
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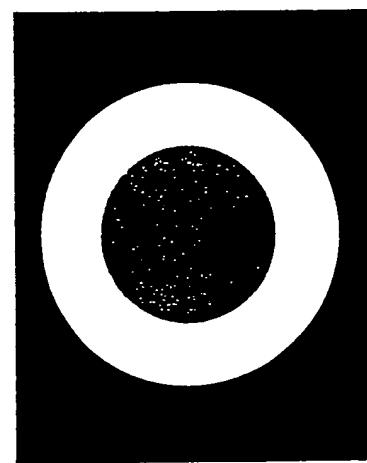
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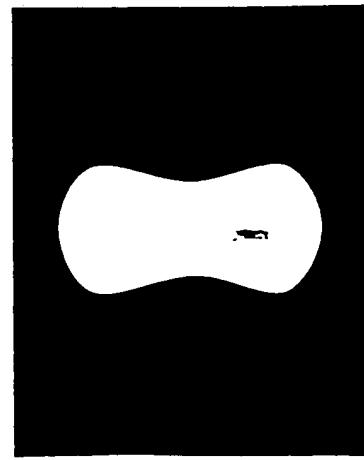
D



E



F



G

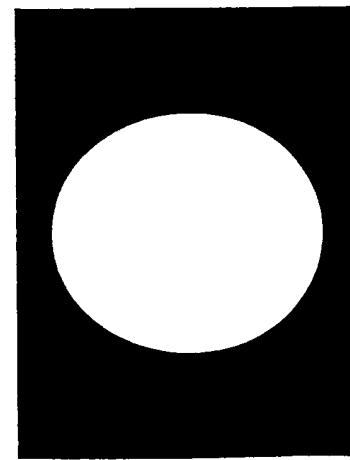
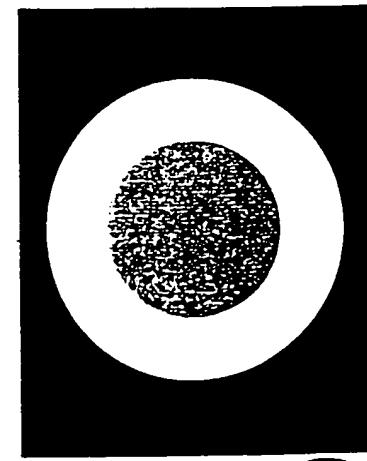
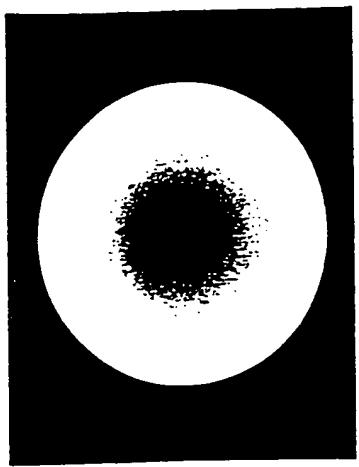


FIG. 9

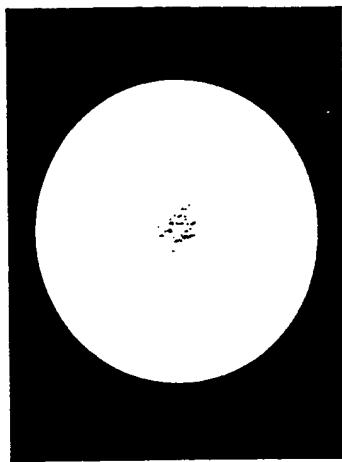
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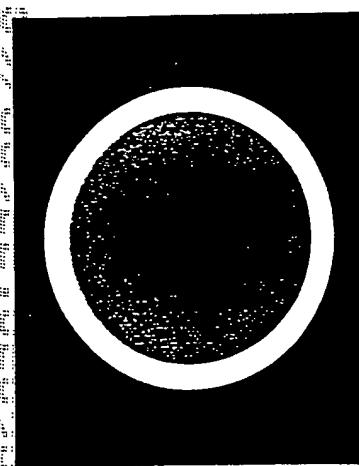
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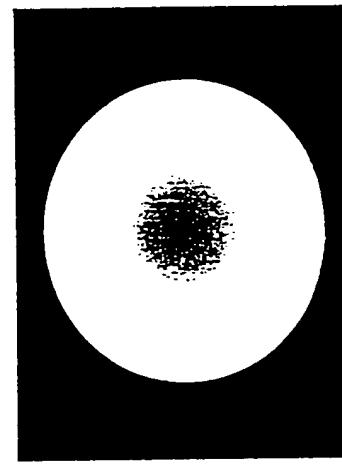
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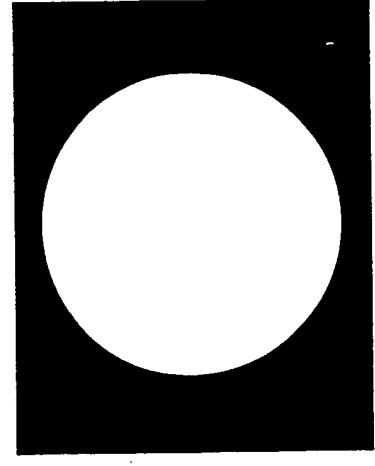
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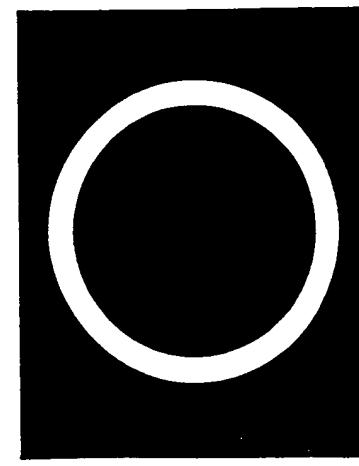
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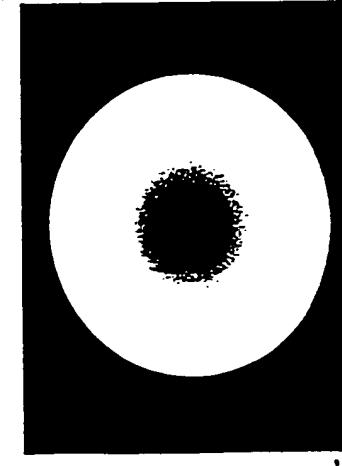
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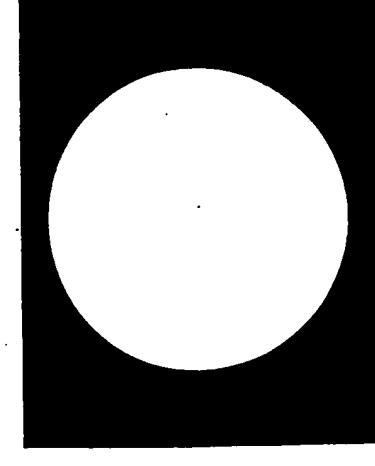
F



G



H



I

FIG. 10

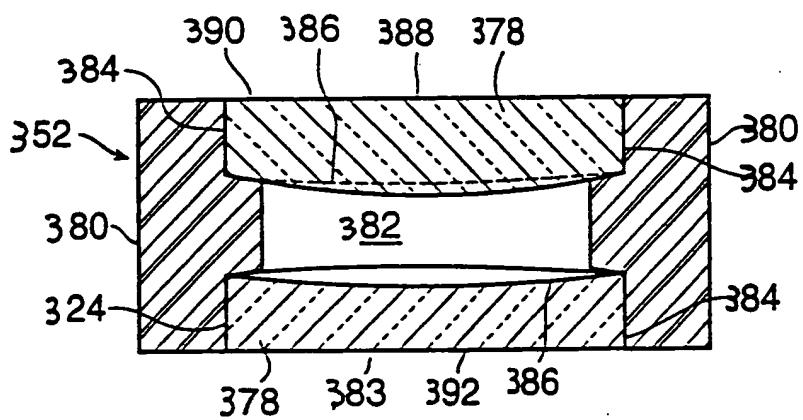


FIG. 11

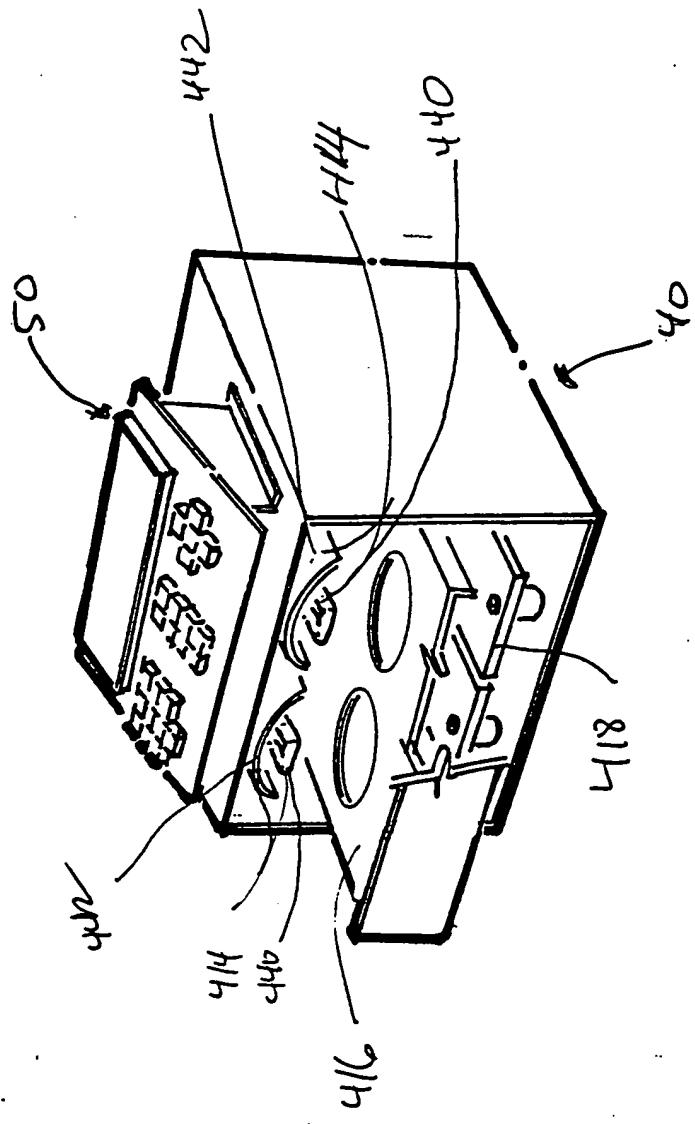


FIG. 12

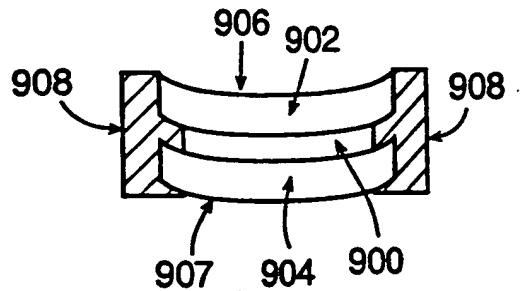
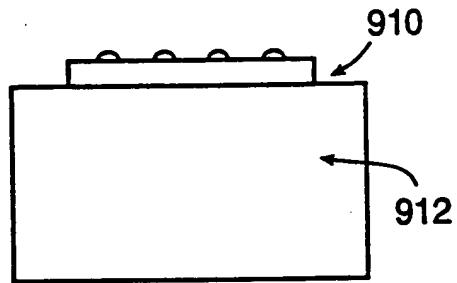
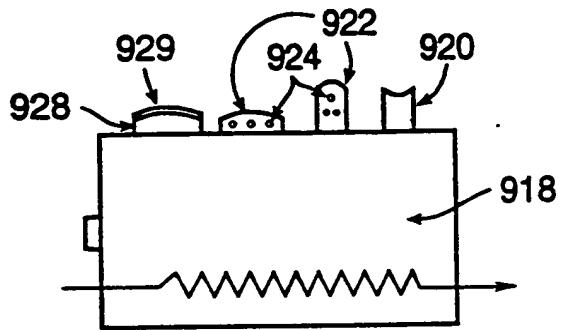
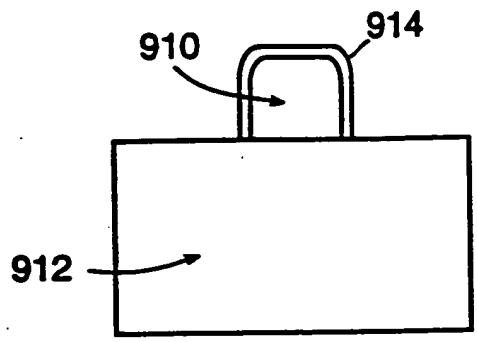


Fig. 17

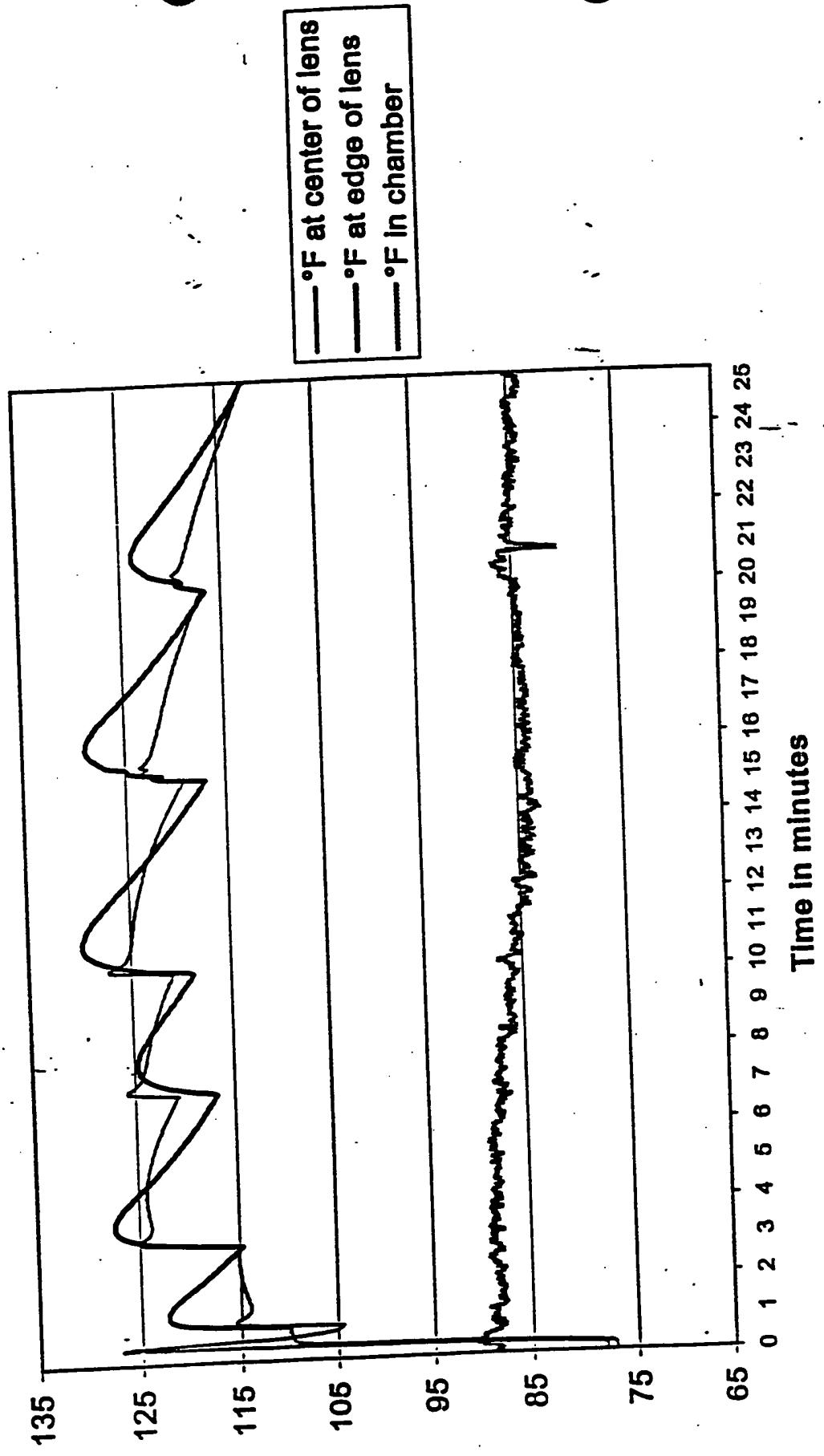
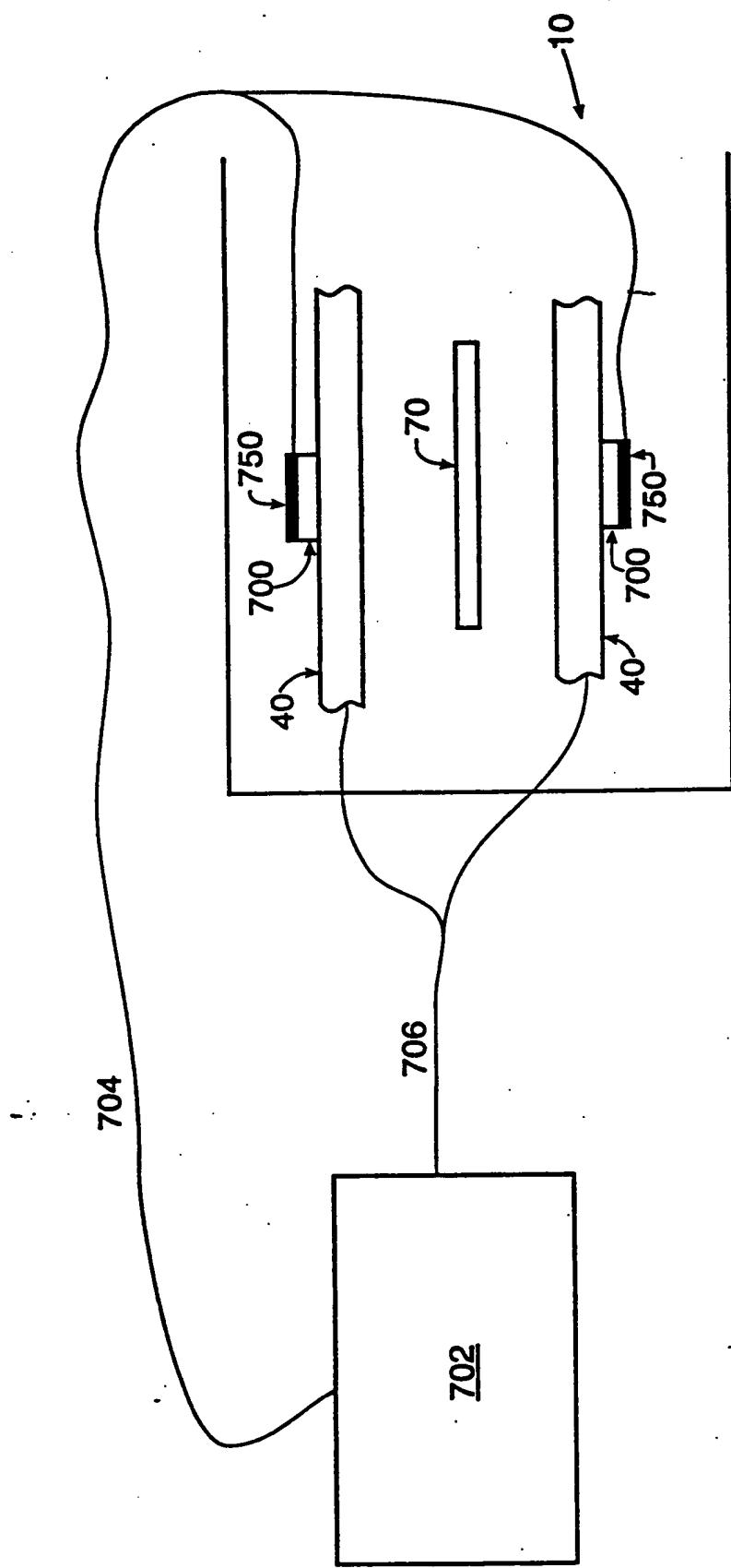


FIG. 18



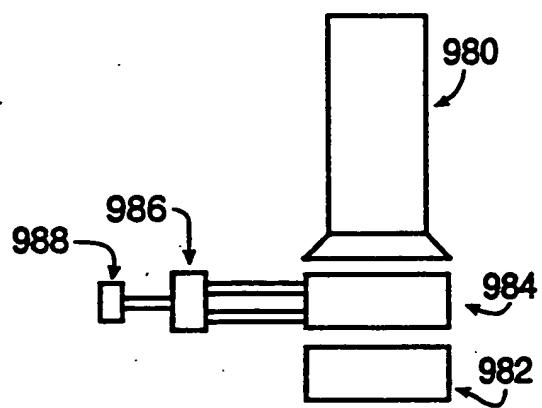


FIG. 19

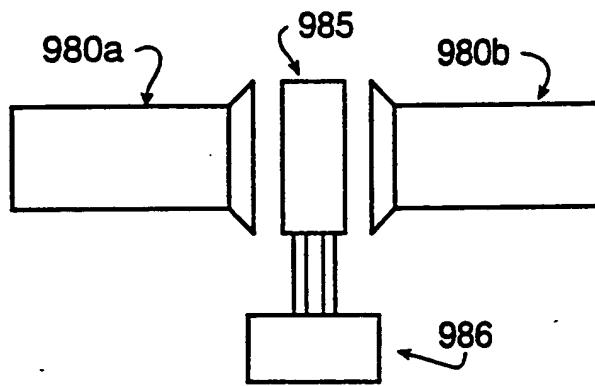


FIG. 20

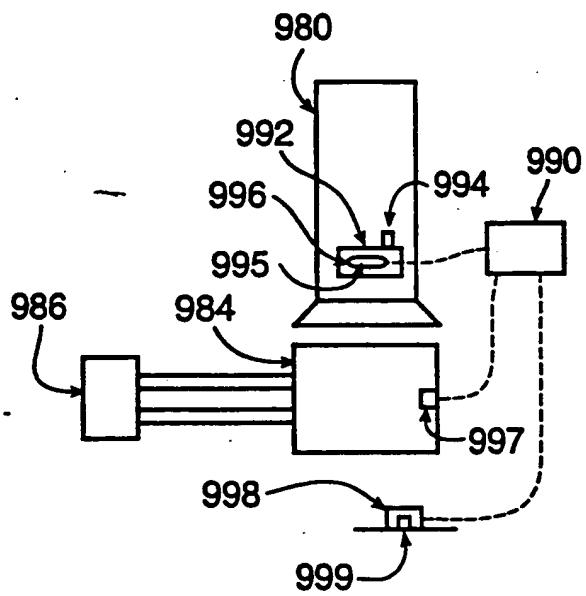
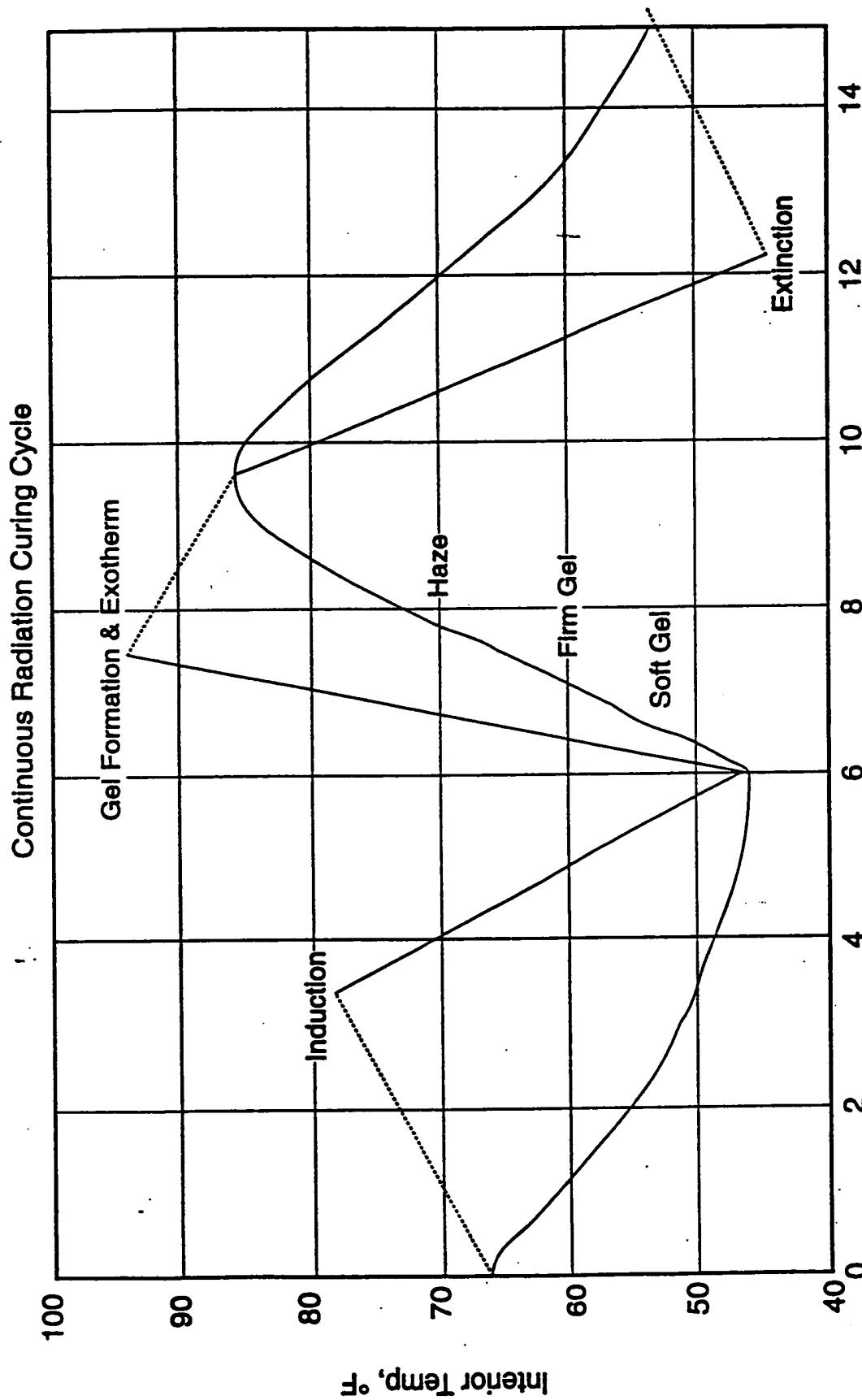


FIG. 21

FIG. 22



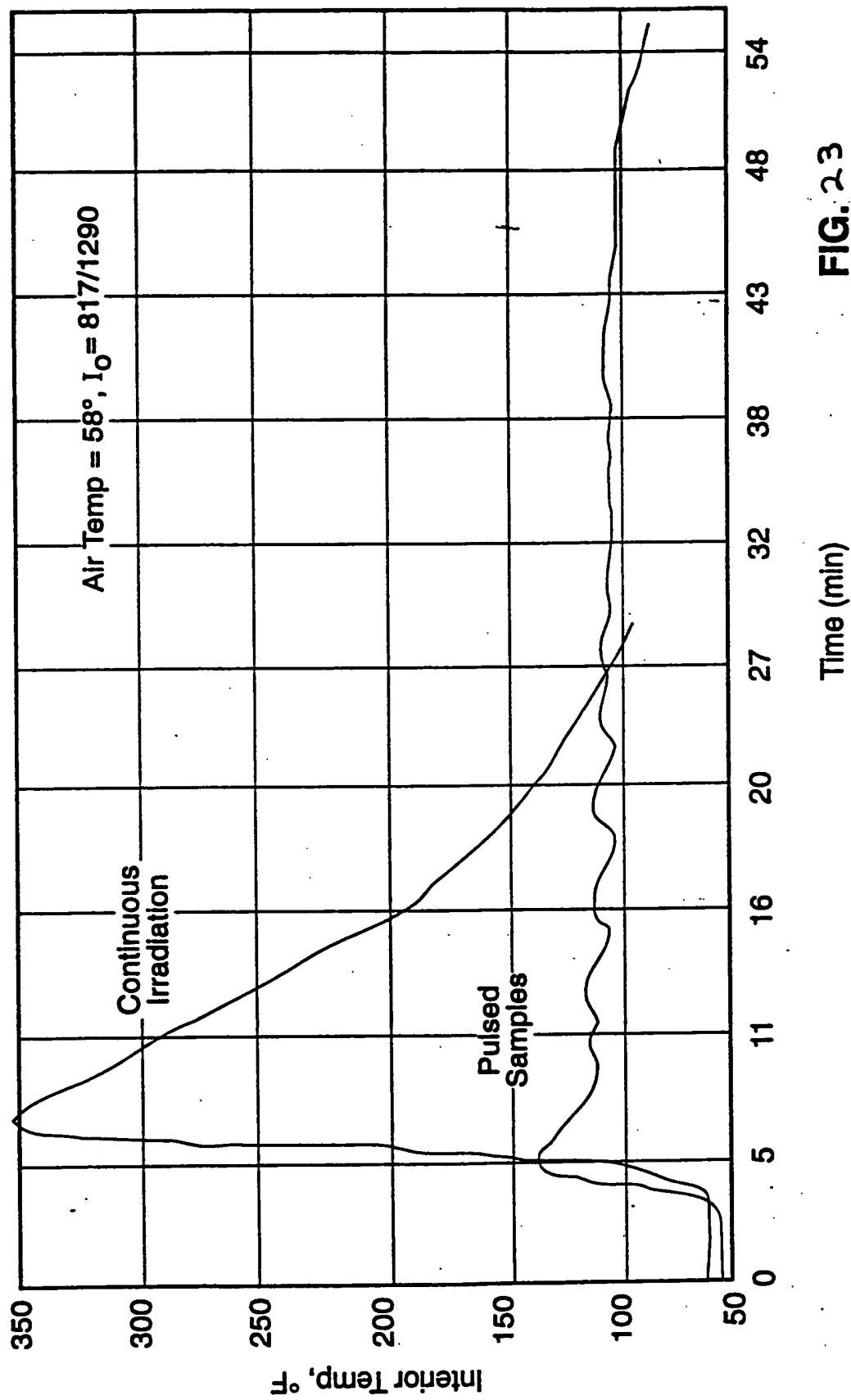


FIG. 23

FIG. 24

Interaction of Pulsed Method Variables

The effect that this variable will tend to have: MASS OF SAMPLE	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
On this cycle variable in: OPTIMAL INITIAL EXPOSURE TIME	As sample mass increases, initial exposure time may be increased. The mass of the sample interacts with light intensity to determine a preferred initial exposure time.	The rate of cooling tends to have a small impact upon the preferred initial exposure period. It is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	Differences in Inhibitor & Initiator levels between batches of otherwise identical monomers may significantly affect induction periods. Various radiation curable compounds may also vary widely in their preferred initial exposure times due to inherent differences in their reactivity.
TOTAL CYCLE TIME	Increased sample mass may require increased total cycle time to dissipate the additional heat generated.	Increased rates of heat removal may allow for a reduction in the time between pulses and thus total cycle time.	A significant effect that various monomers may have upon total cycle time will come from their different preferred initial exposure times.
TIMING BETWEEN PULSES	Increased sample mass may require longer periods of cooling between pulses of light. More heat tends to be generated from each pulse for larger samples, thus requiring longer time periods to remove heat.	Increased rates of heat removal tend to allow for a reduction in the time between pulses.	The duration of the pulses may be adjusted to create the desired amount of reaction and heat generation for the particular lens forming material being cured. Adjusting the cooling period between pulses may also be beneficial.

The effect that this variable will tend to have:

Interaction of Pulsed Method Variables (continued)

MASS OF SAMPLE	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
On this cycle variable in: TOTAL EXPOSURE TIME	Increased sample mass tends to require both increased initial exposure time and a greater number of pulse/cooling cycles.	There is only a small relationship between the total dosage of light required to polymerize and the rate at which it is being cooled. It is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	A significant effect that monomer identity may have on total cycle time may be contributed by differences in the preferred initial exposure period. Various lens forming materials may also require longer/shorter duration pulses depending upon their reactivity.
	The length of the pulses during each phase of the curing cycle may be adjusted for different mass samples. The time between pulses may be increased /decreased according to mass.	The duration of the pulses may be varied in inverse proportion with the light intensity selected. It is believed, however that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	A pulse will tend to generate a certain amount of heat to be dissipated. Since the pulse duration tends to be small relative to the time between pulses when the heat is being removed, changes in the rate of heat removal should not significantly affect the ideal pulse duration.

FIG. 24
(continued)

FIG. 25

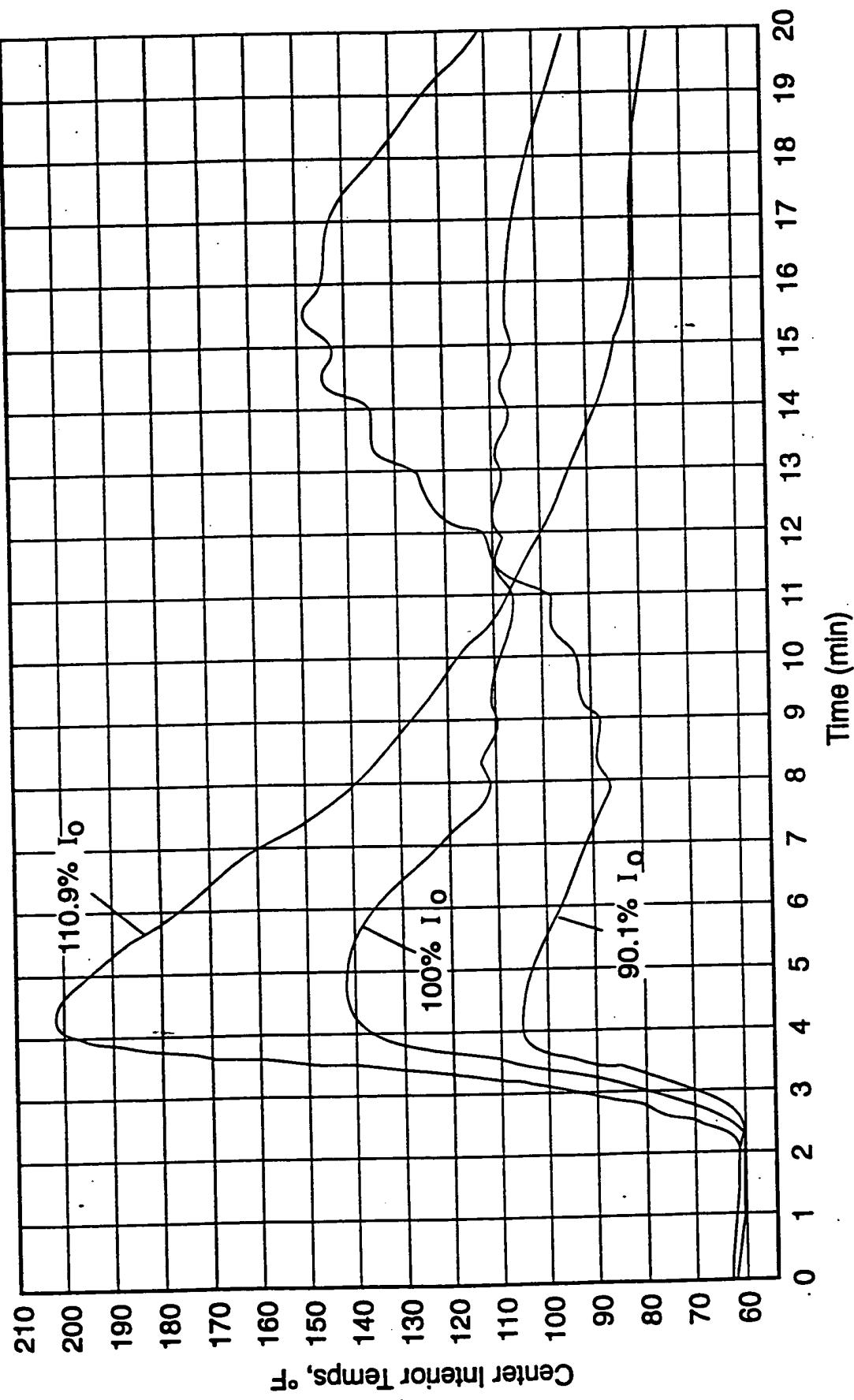


FIG. 26

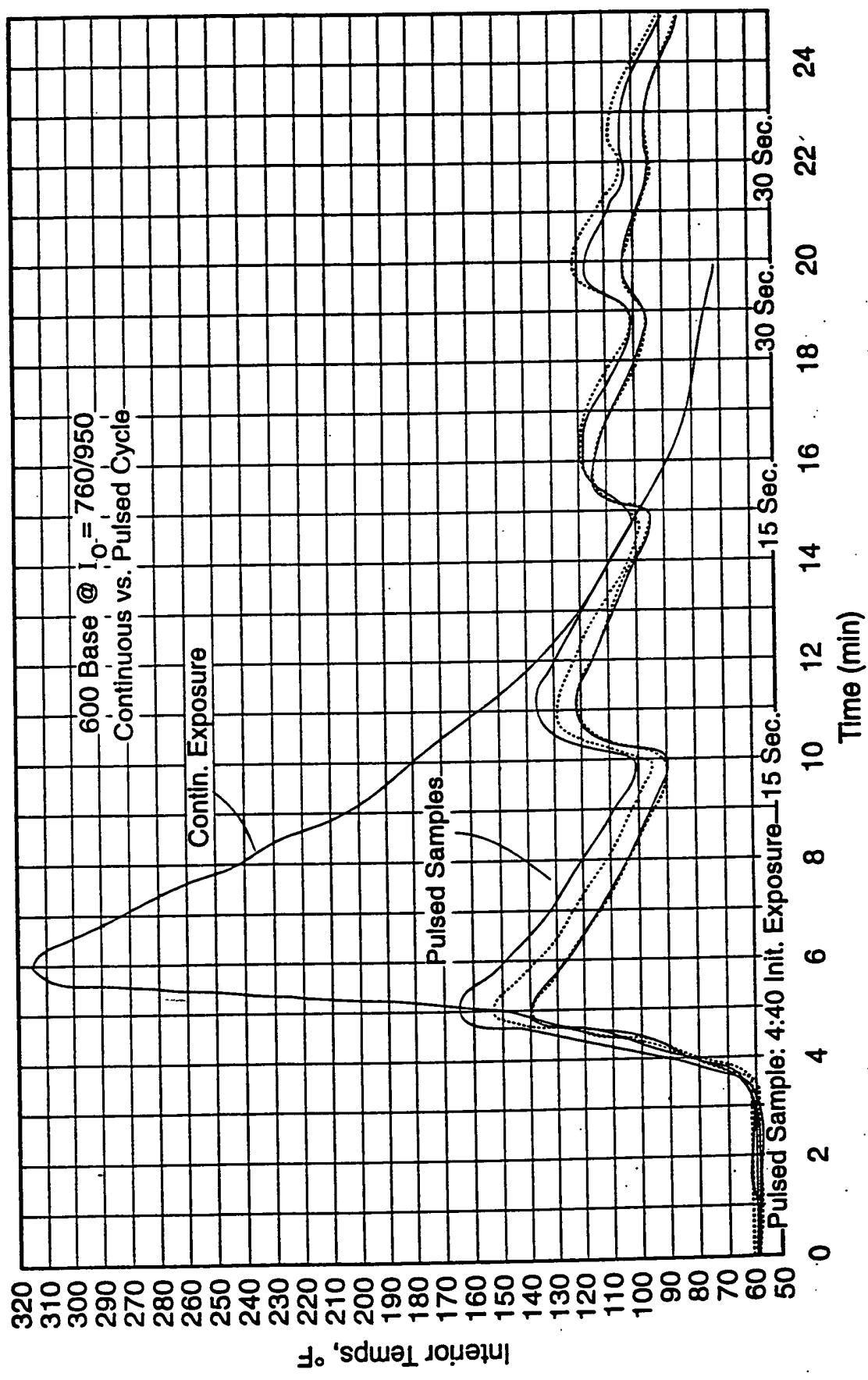


FIG. 27

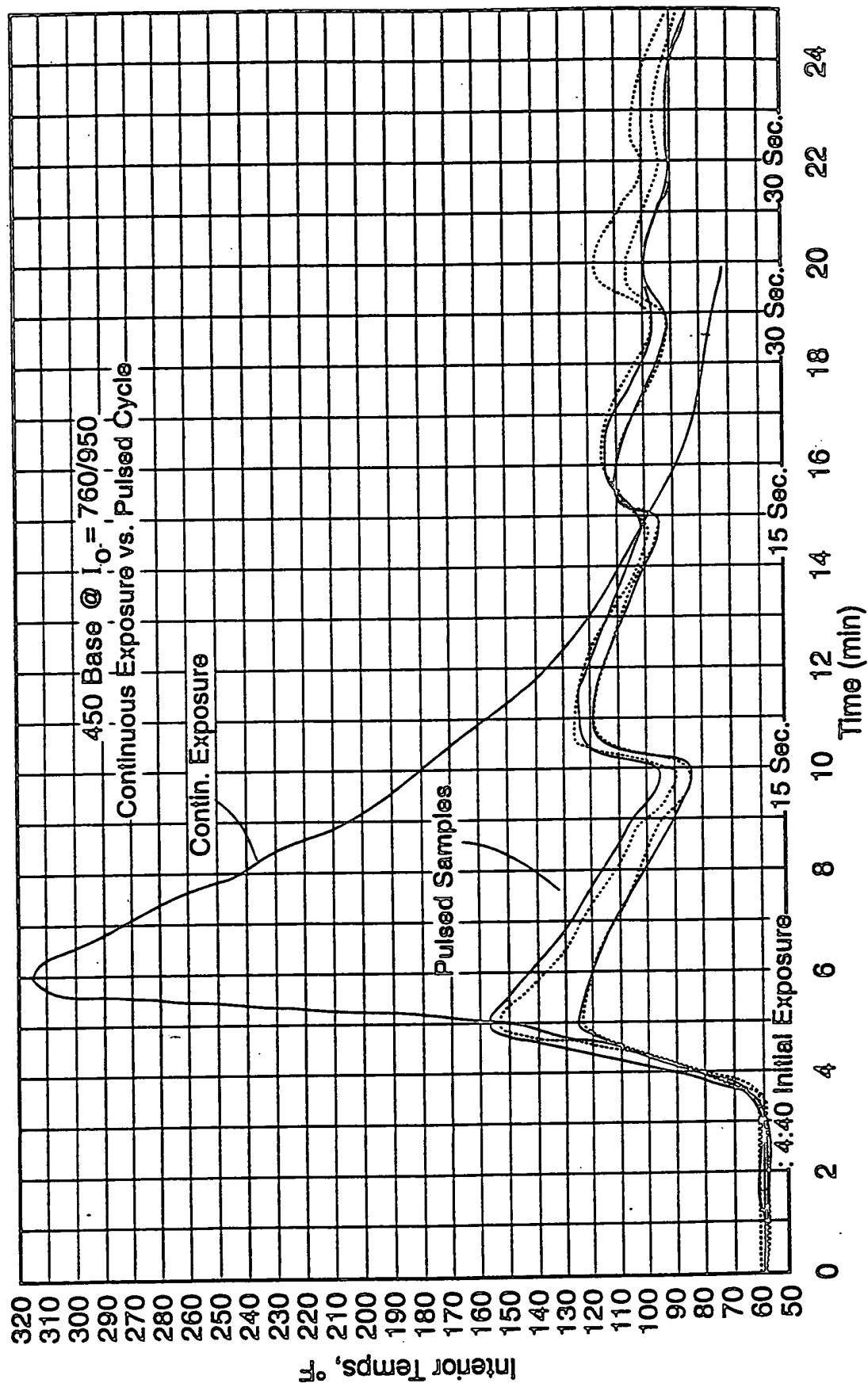
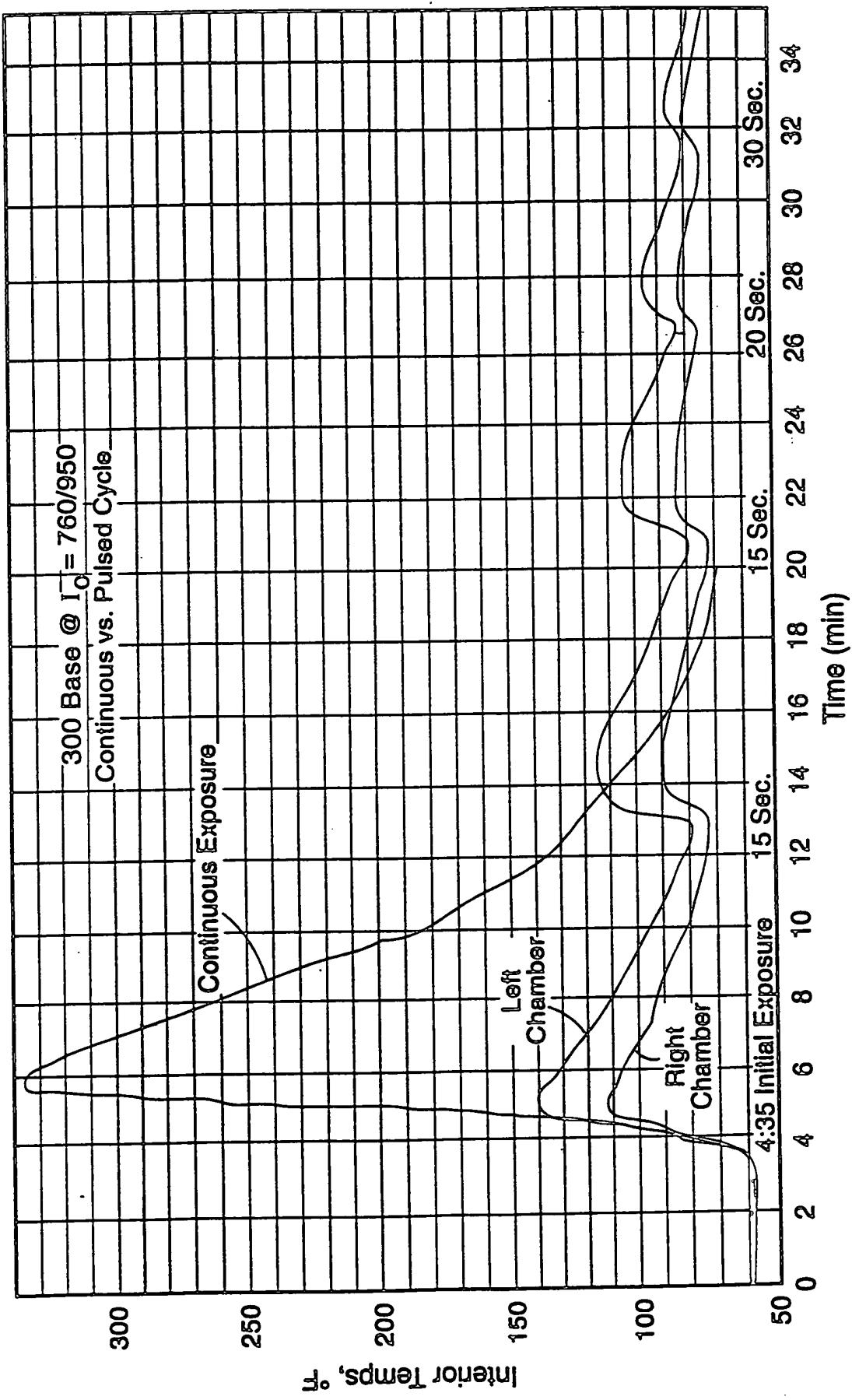


FIG. 28



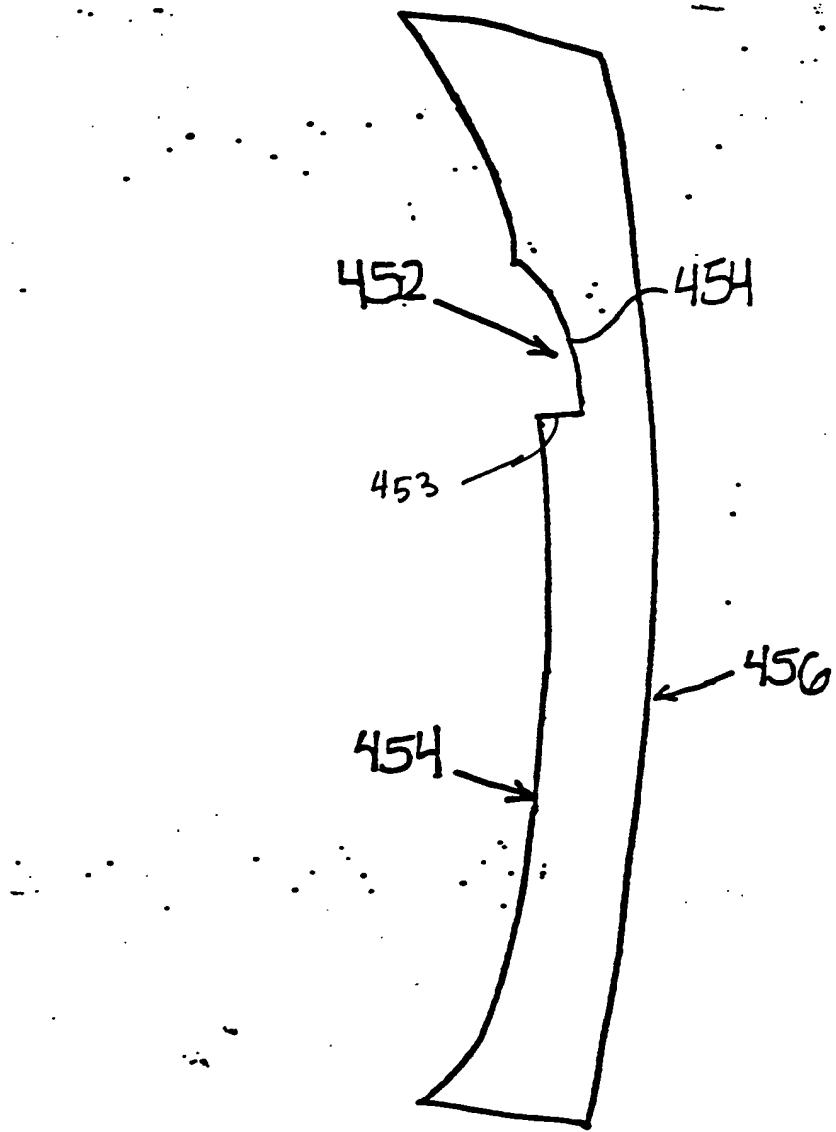


FIG. 29

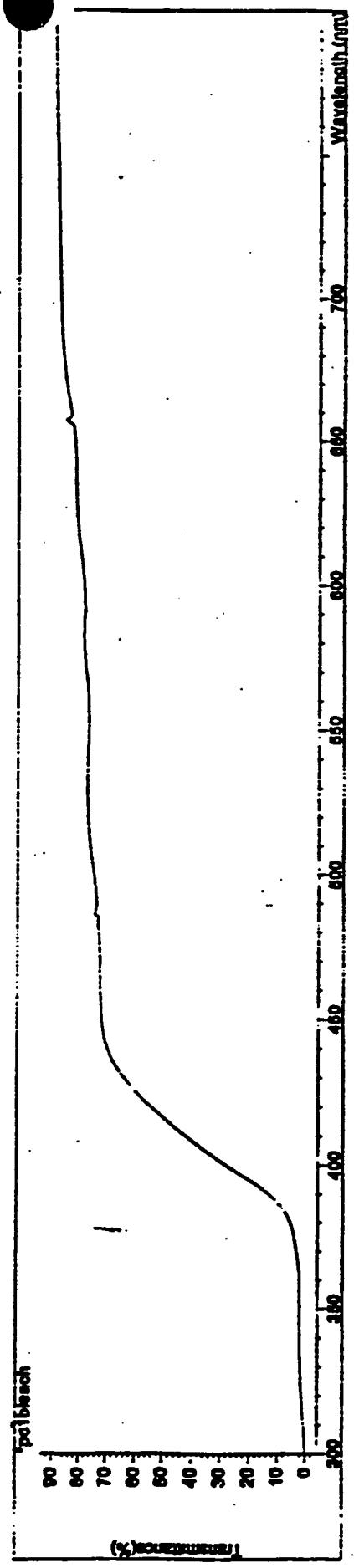


FIG. 30

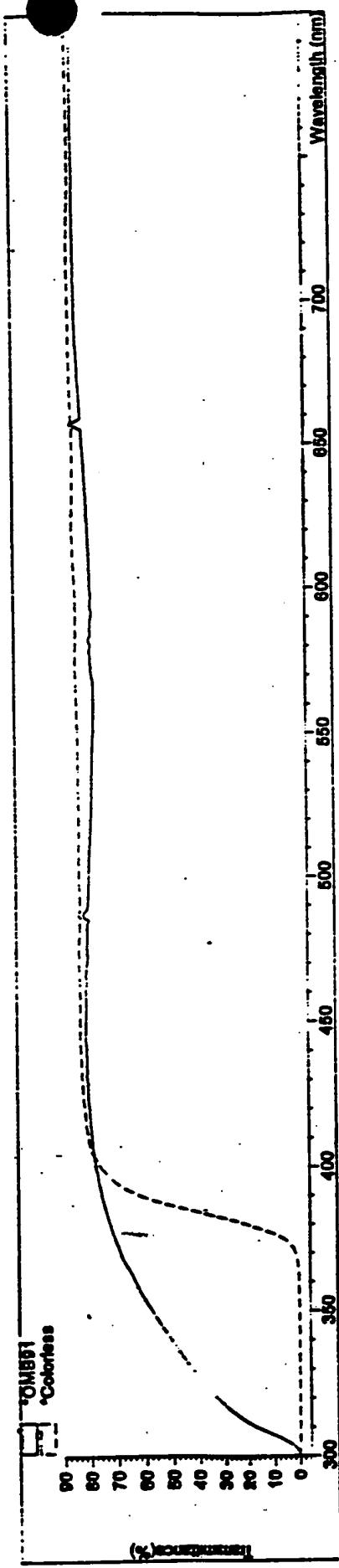


FIG. 31

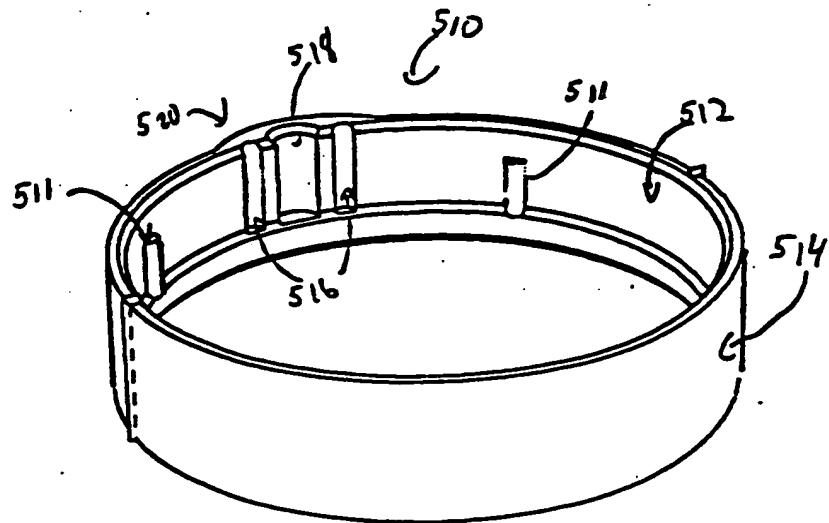


Fig. 32

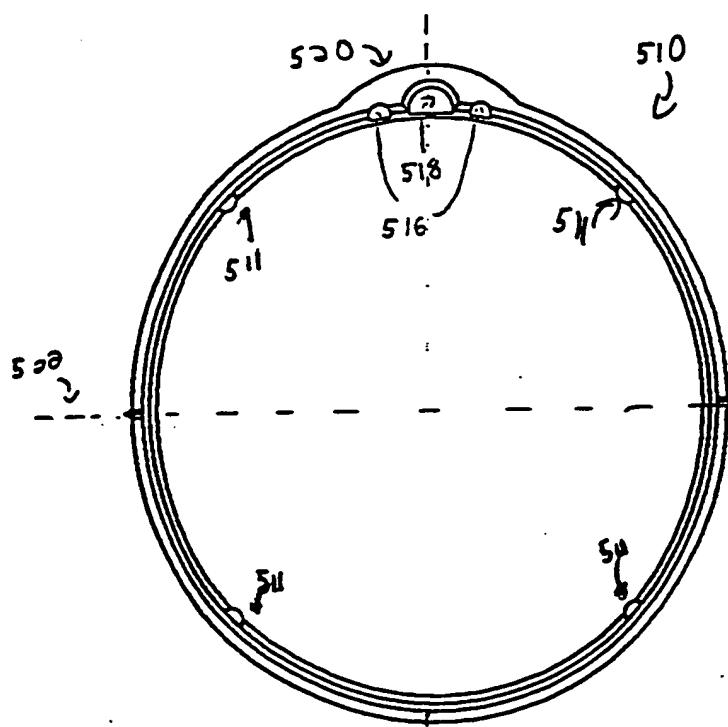


Fig. 33

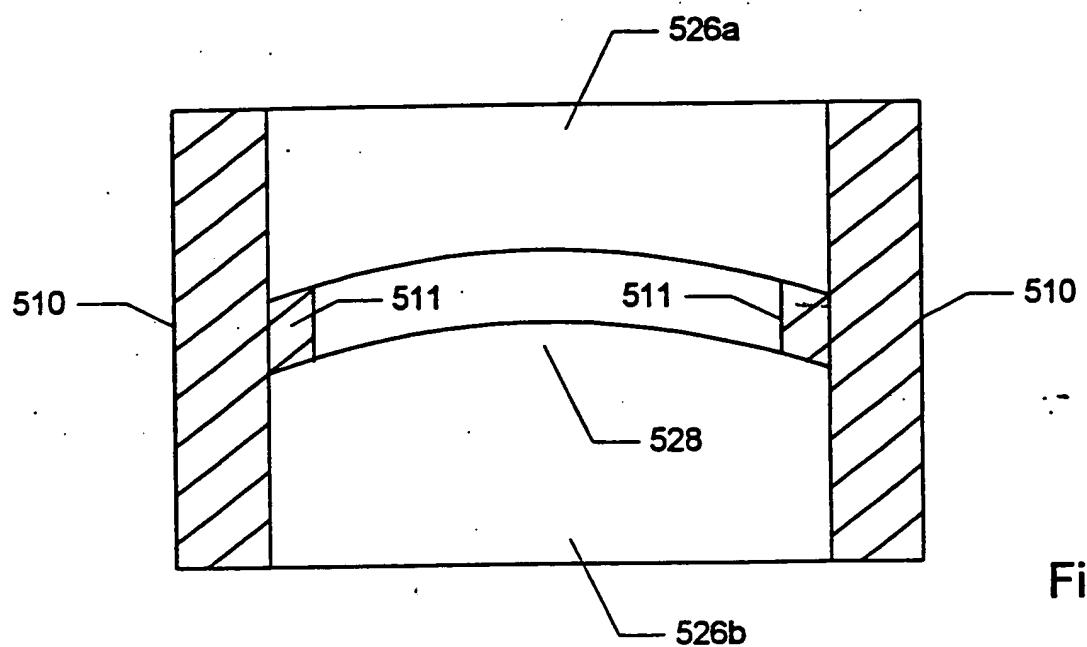


Fig. 34

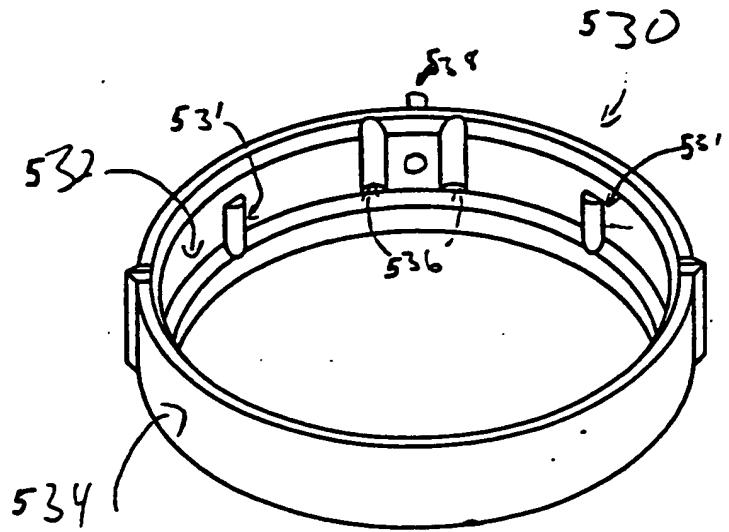


Fig. 35

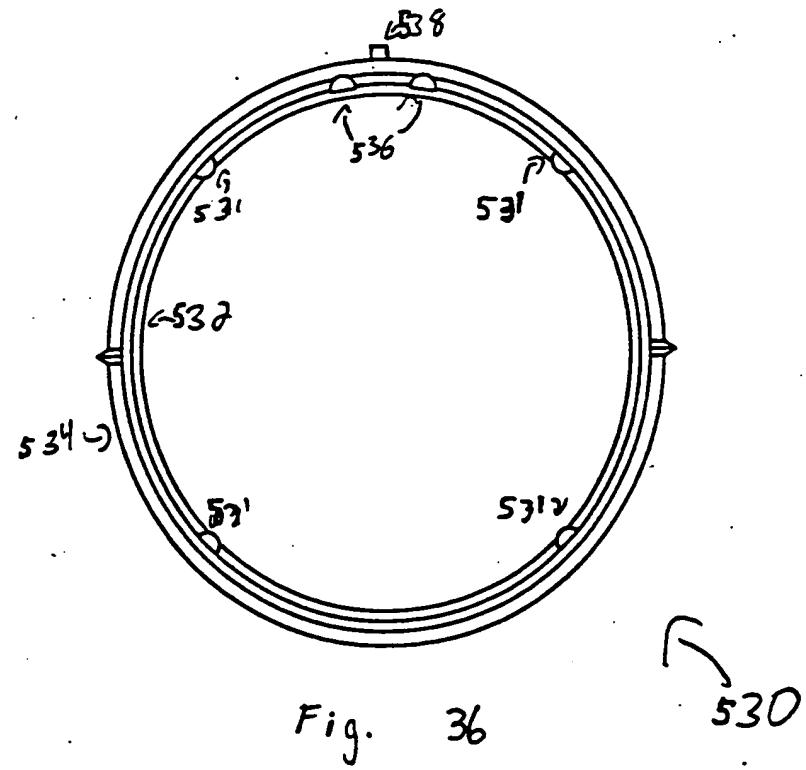


Fig. 36

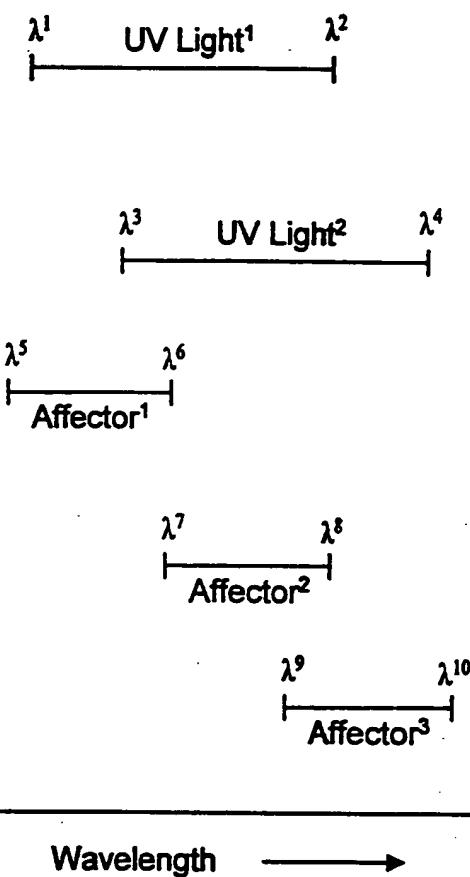
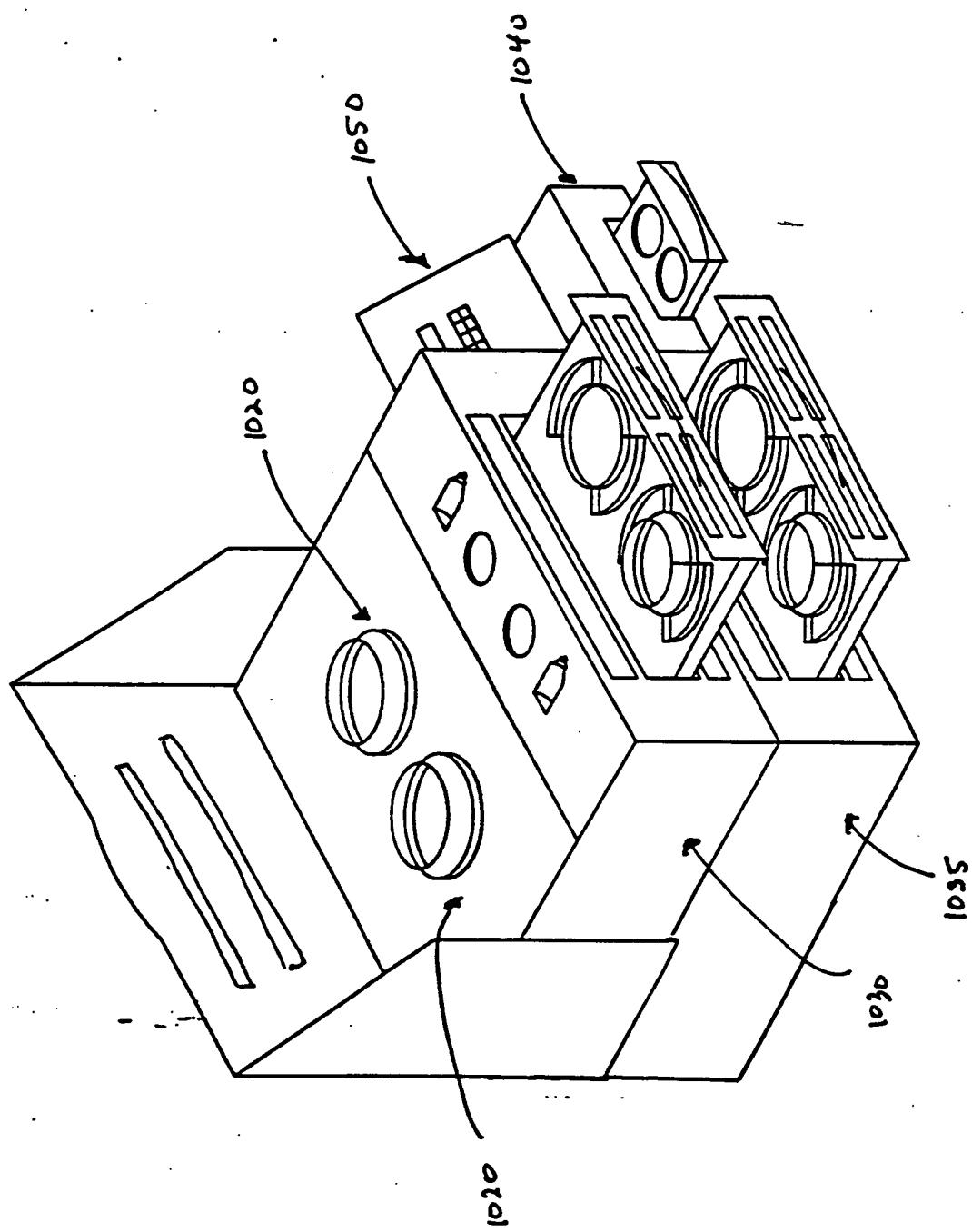
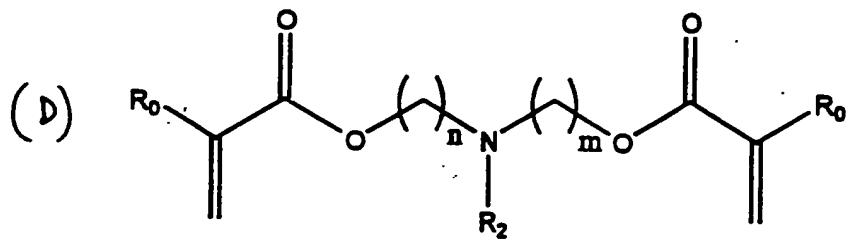
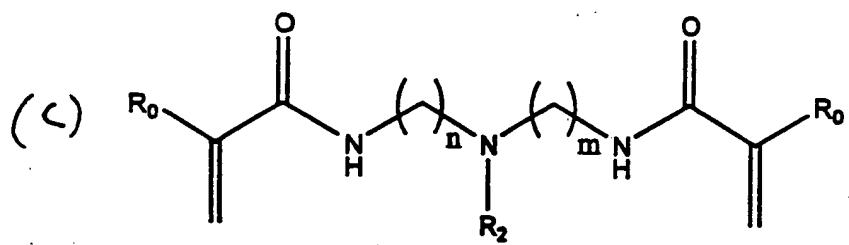
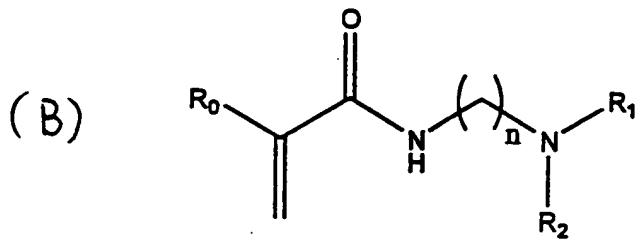
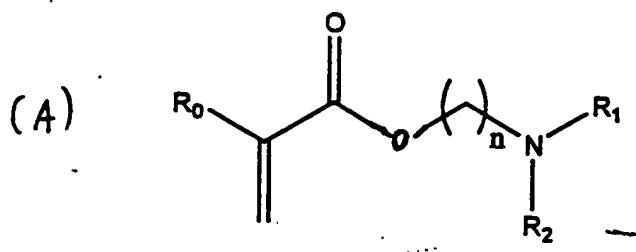


FIG. 37

FIG. 38





F16. 39

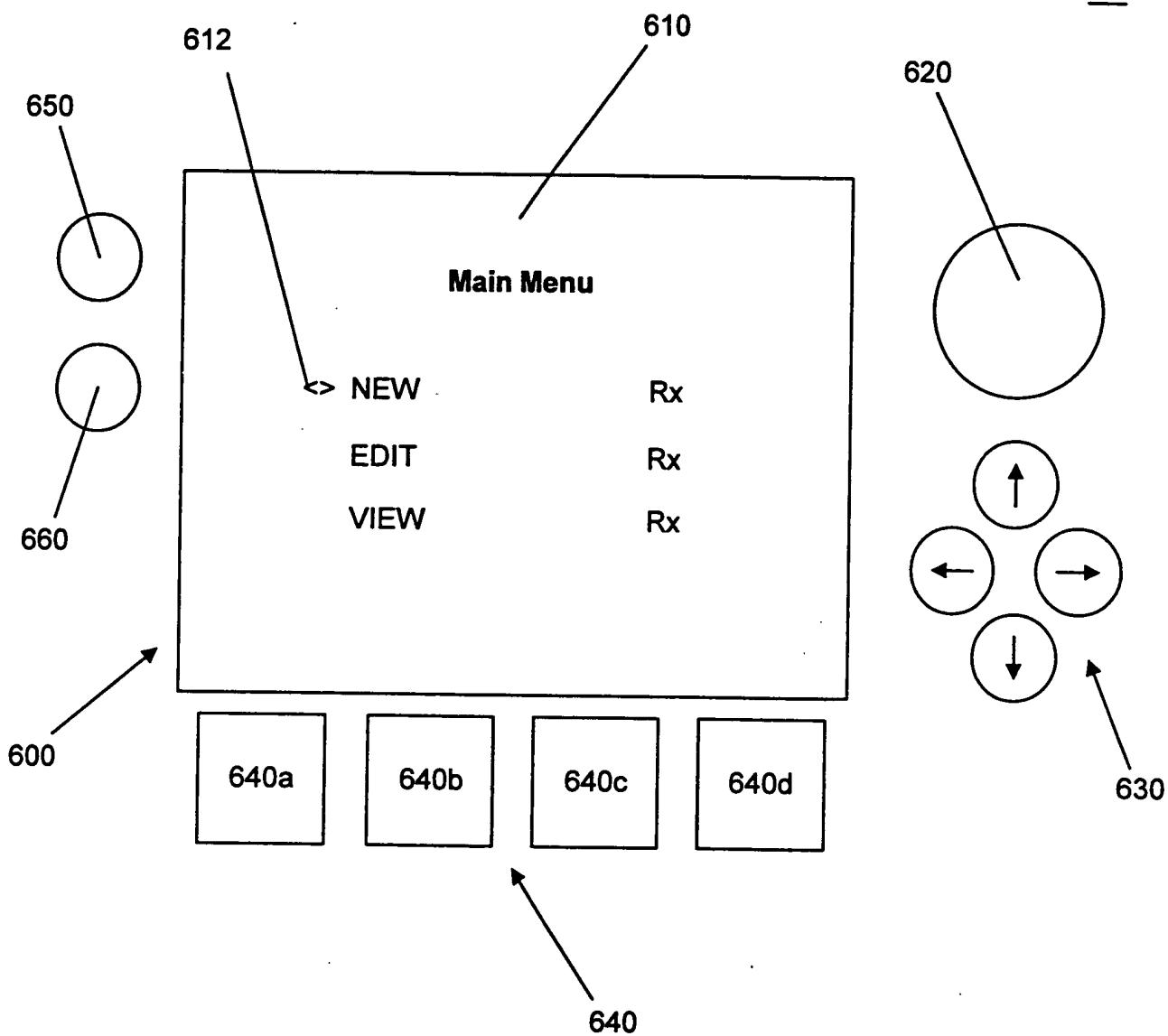


FIG. 40

50

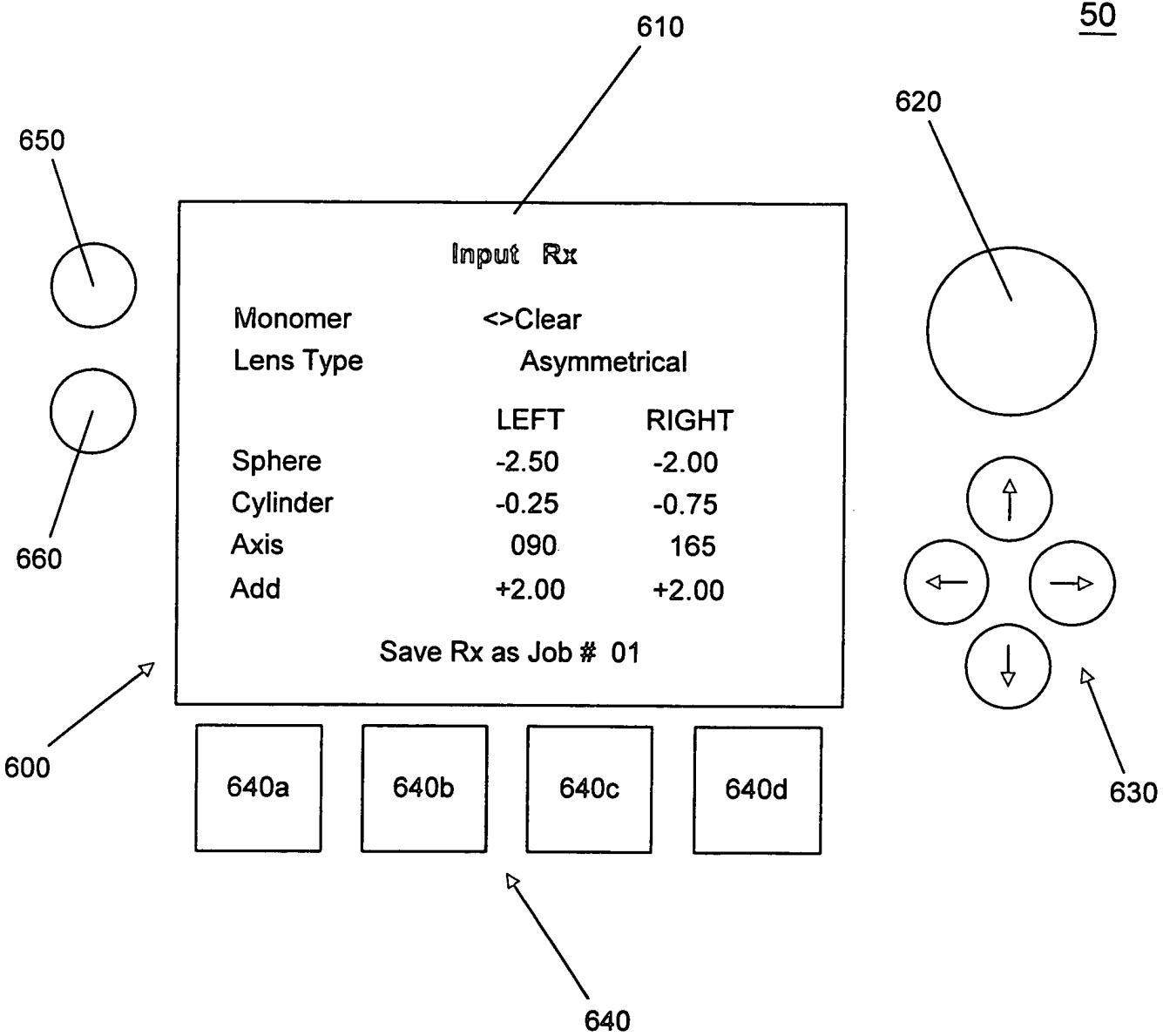


FIG. 41

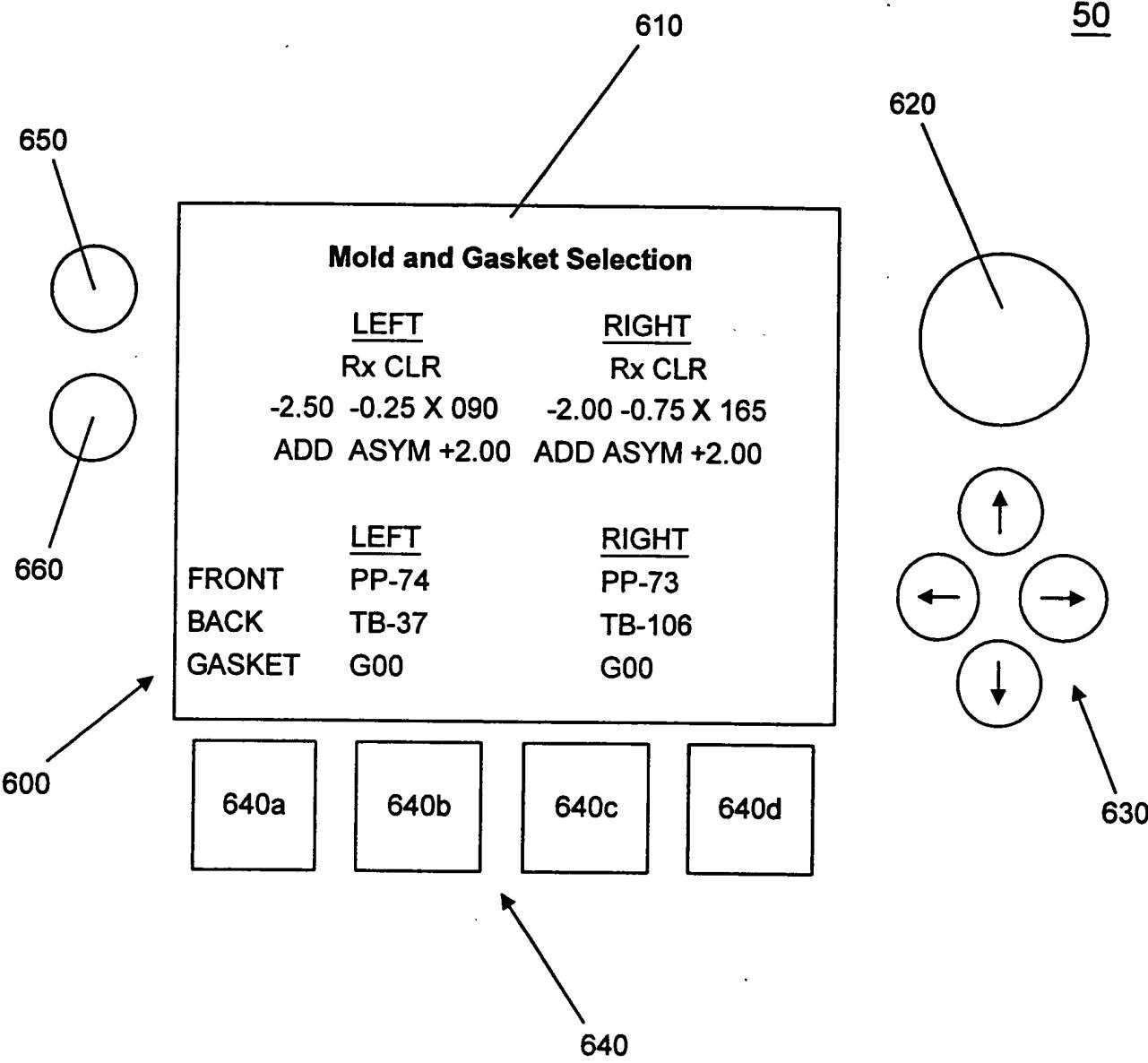


FIG. 42

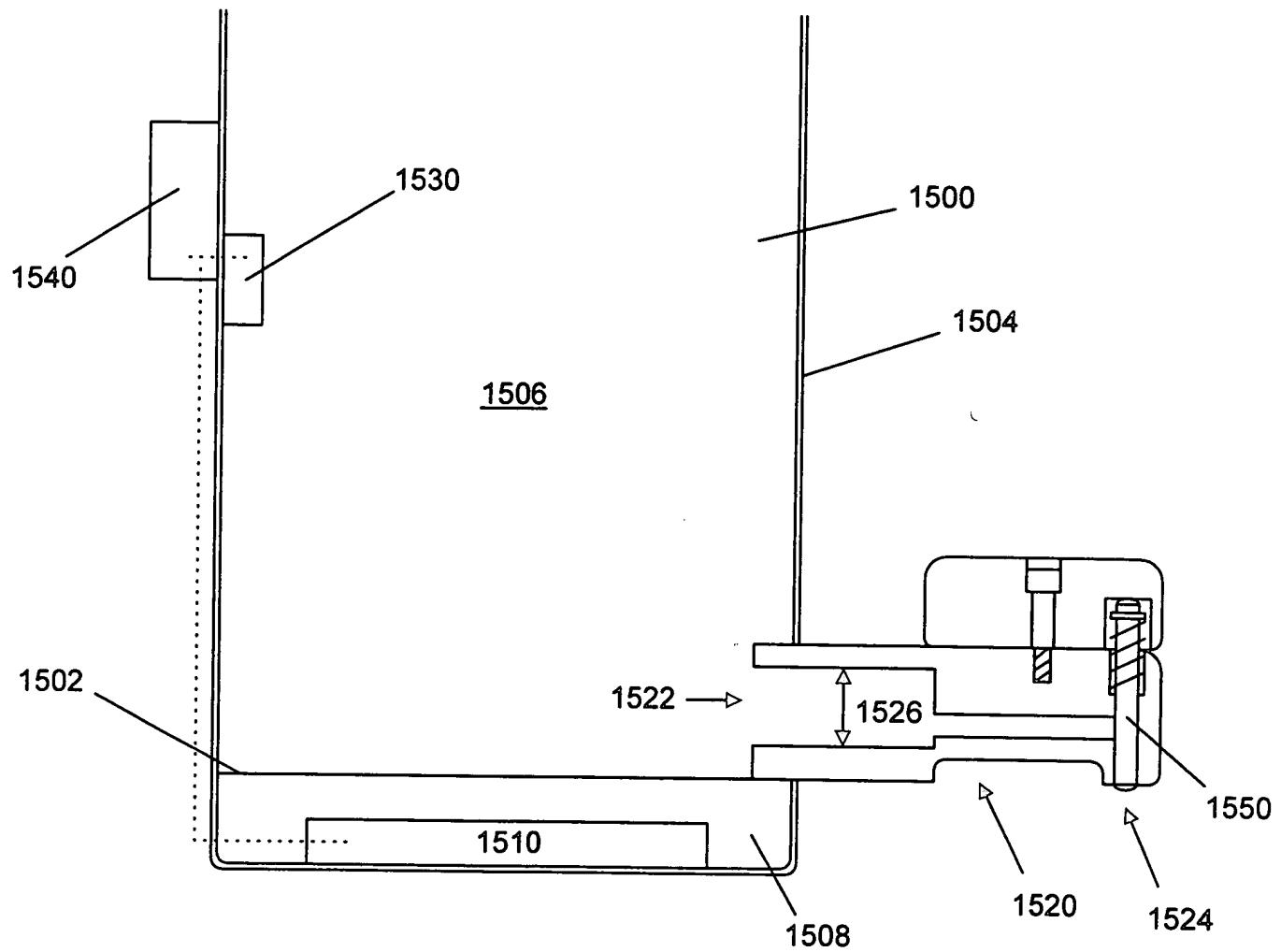


FIG. 43

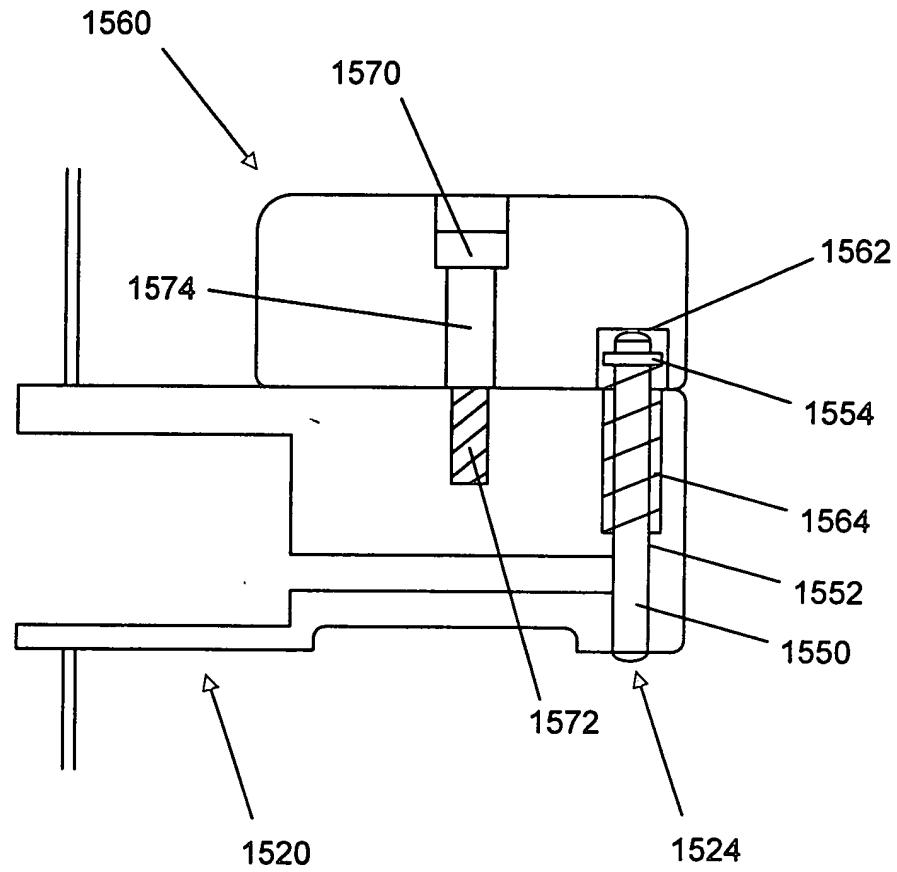


FIG. 44

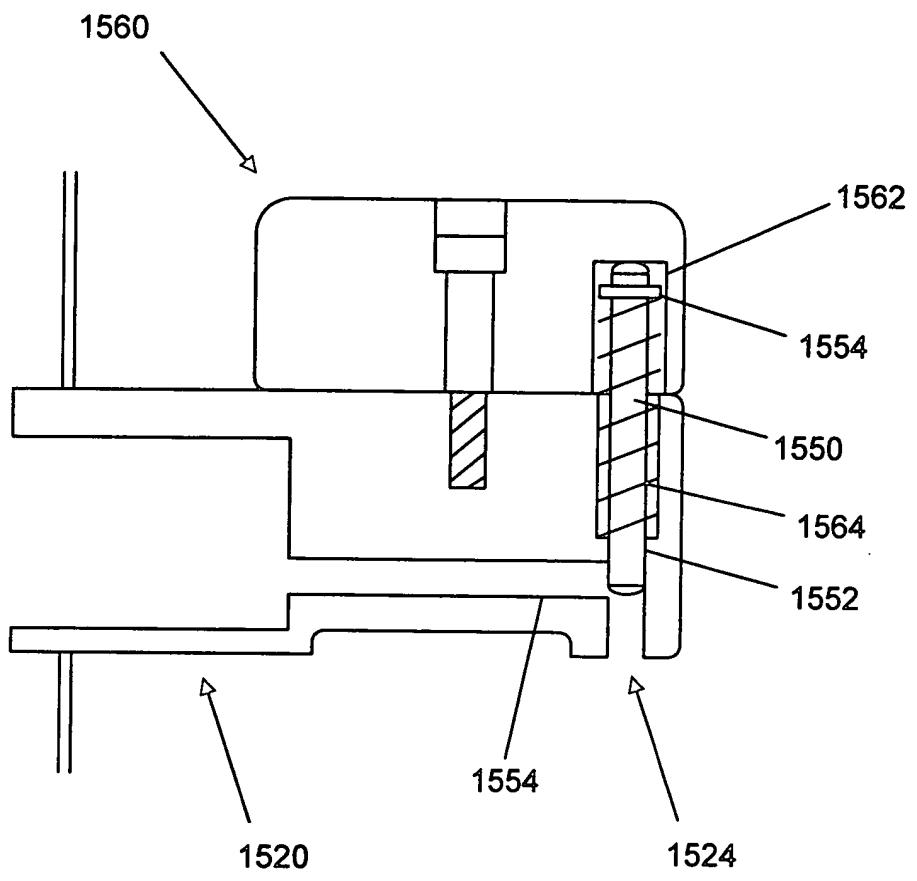


FIG. 45

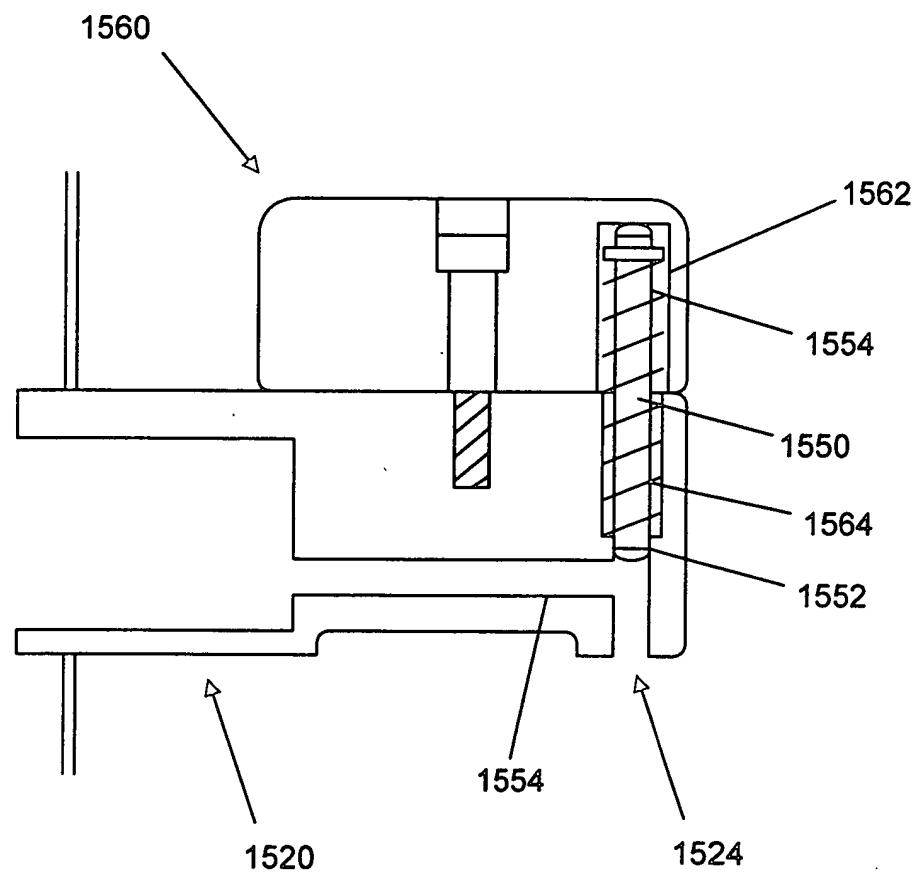


FIG. 46

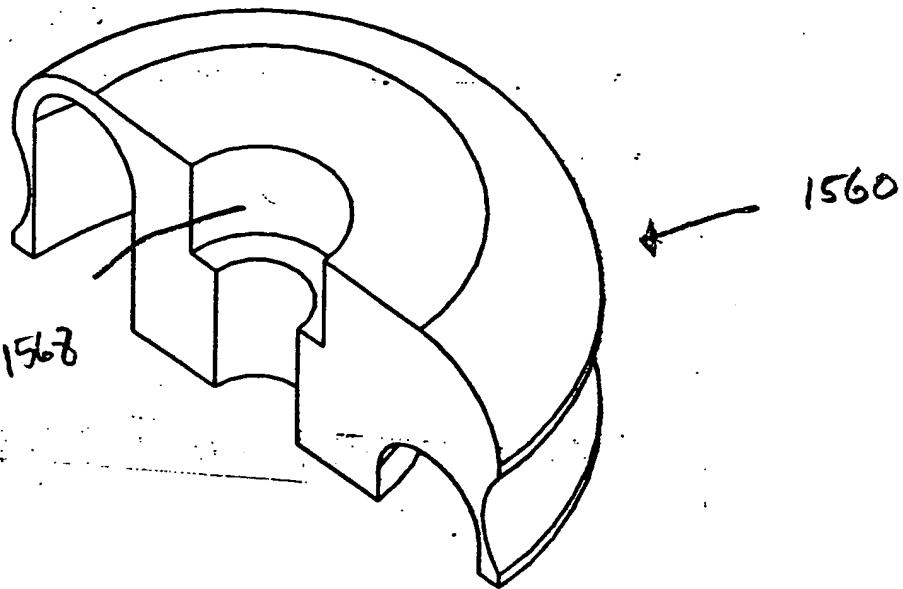


FIG. 47

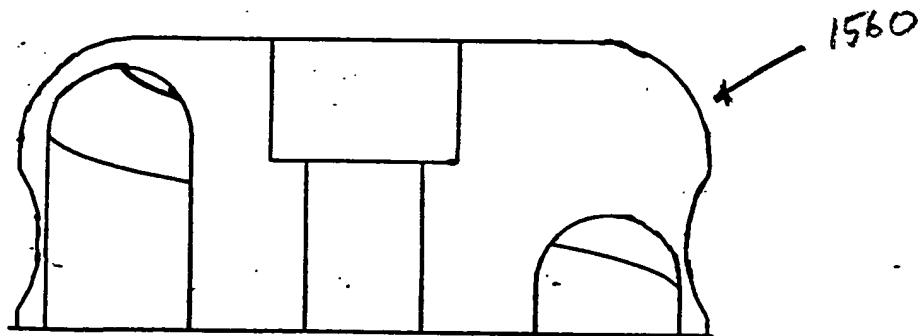


FIG. 48

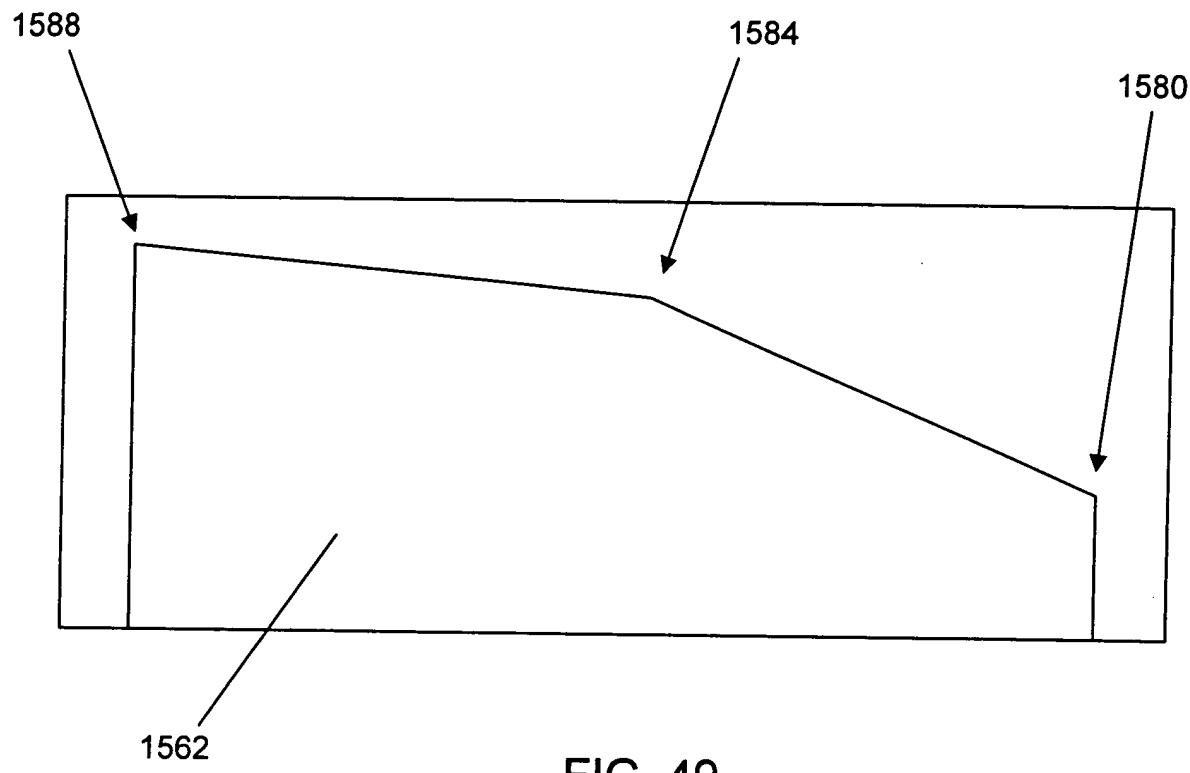


FIG. 49

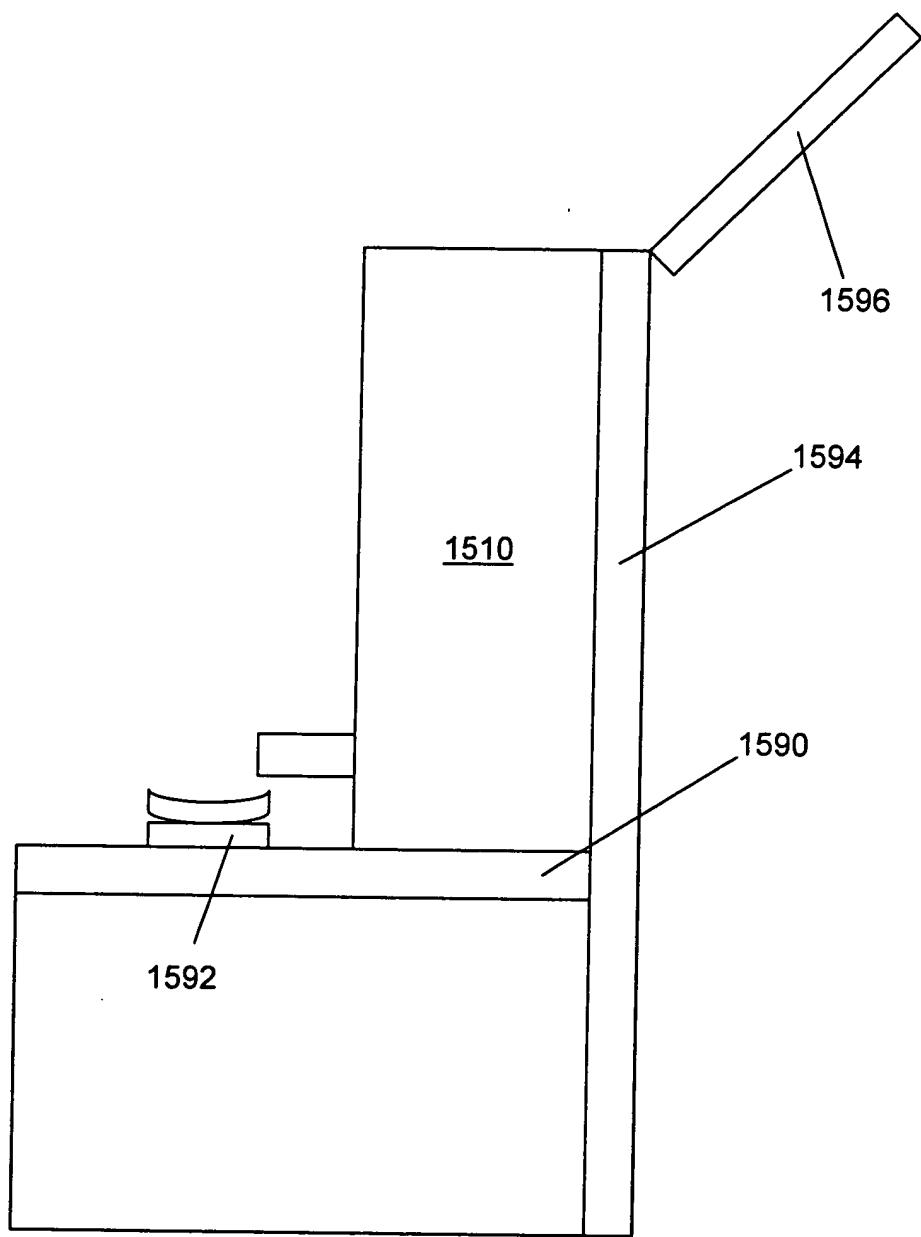


FIG. 50

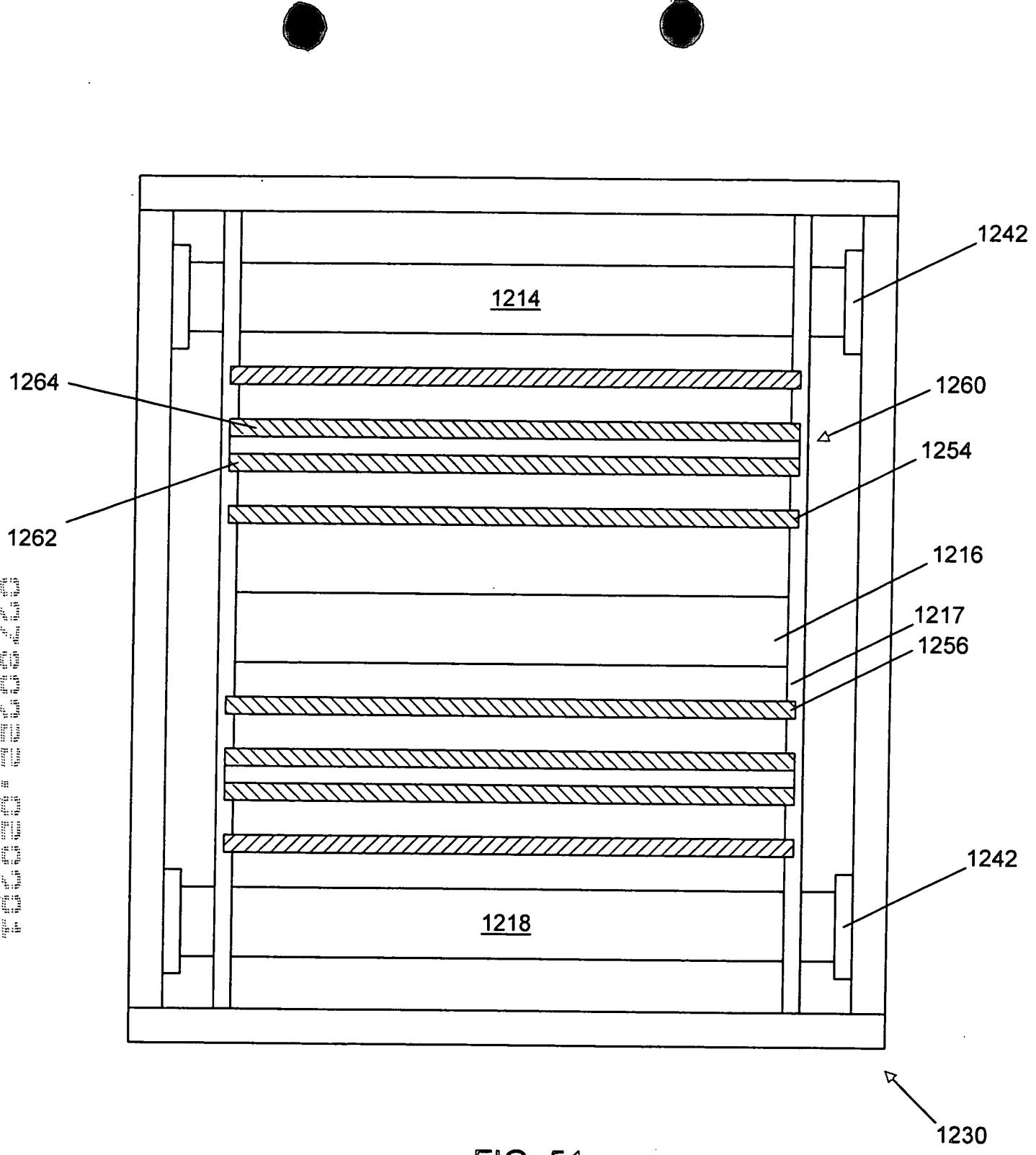


FIG. 51

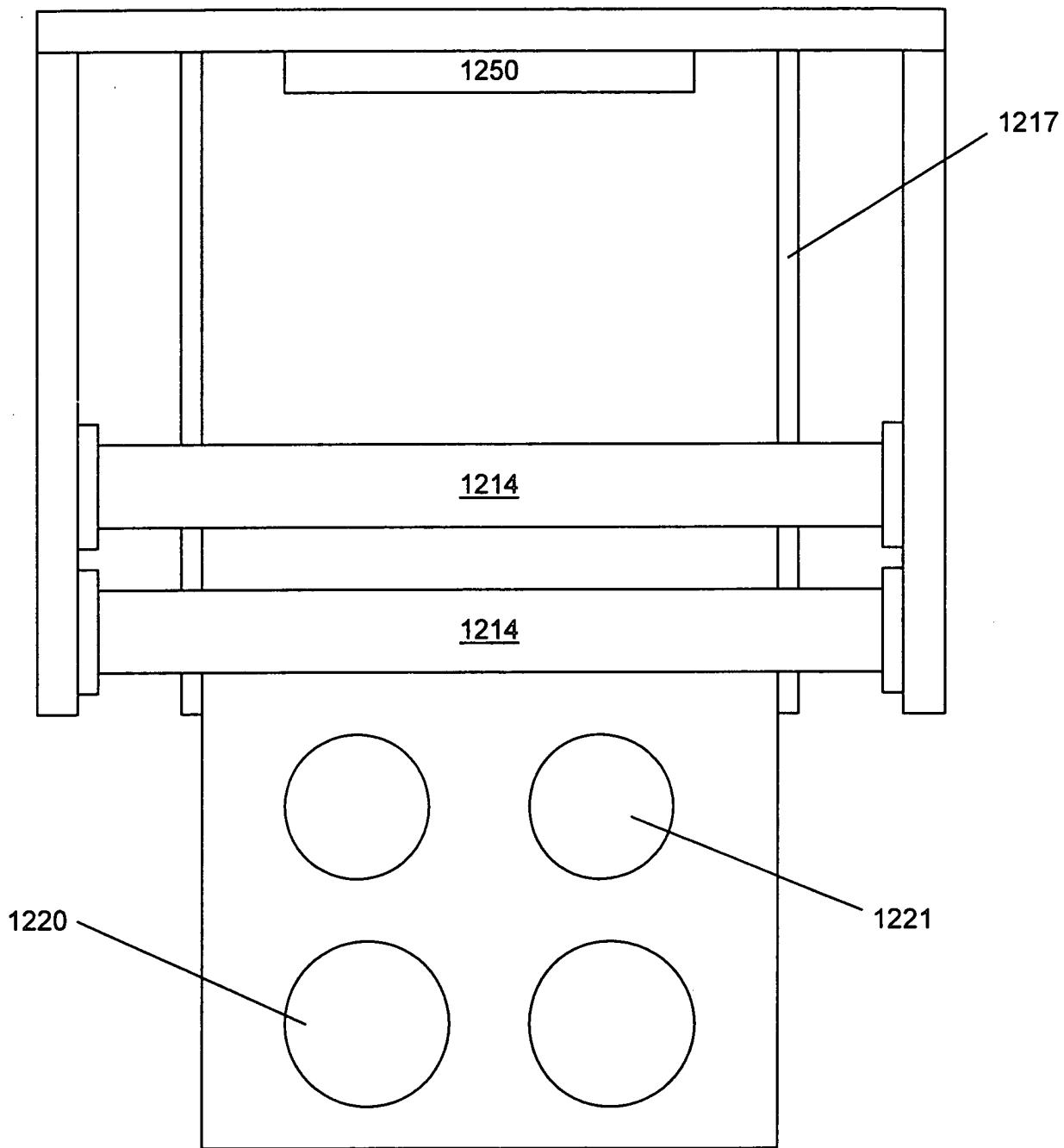


FIG. 52

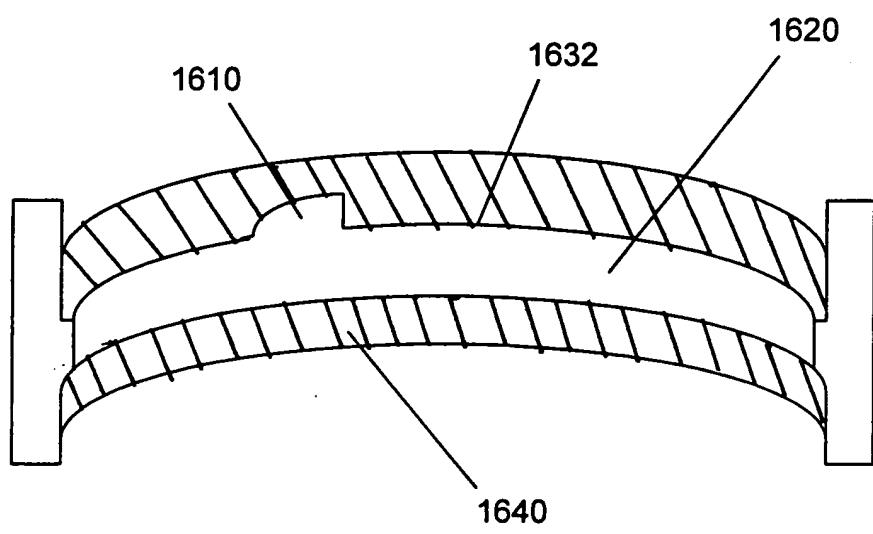


FIG. 53